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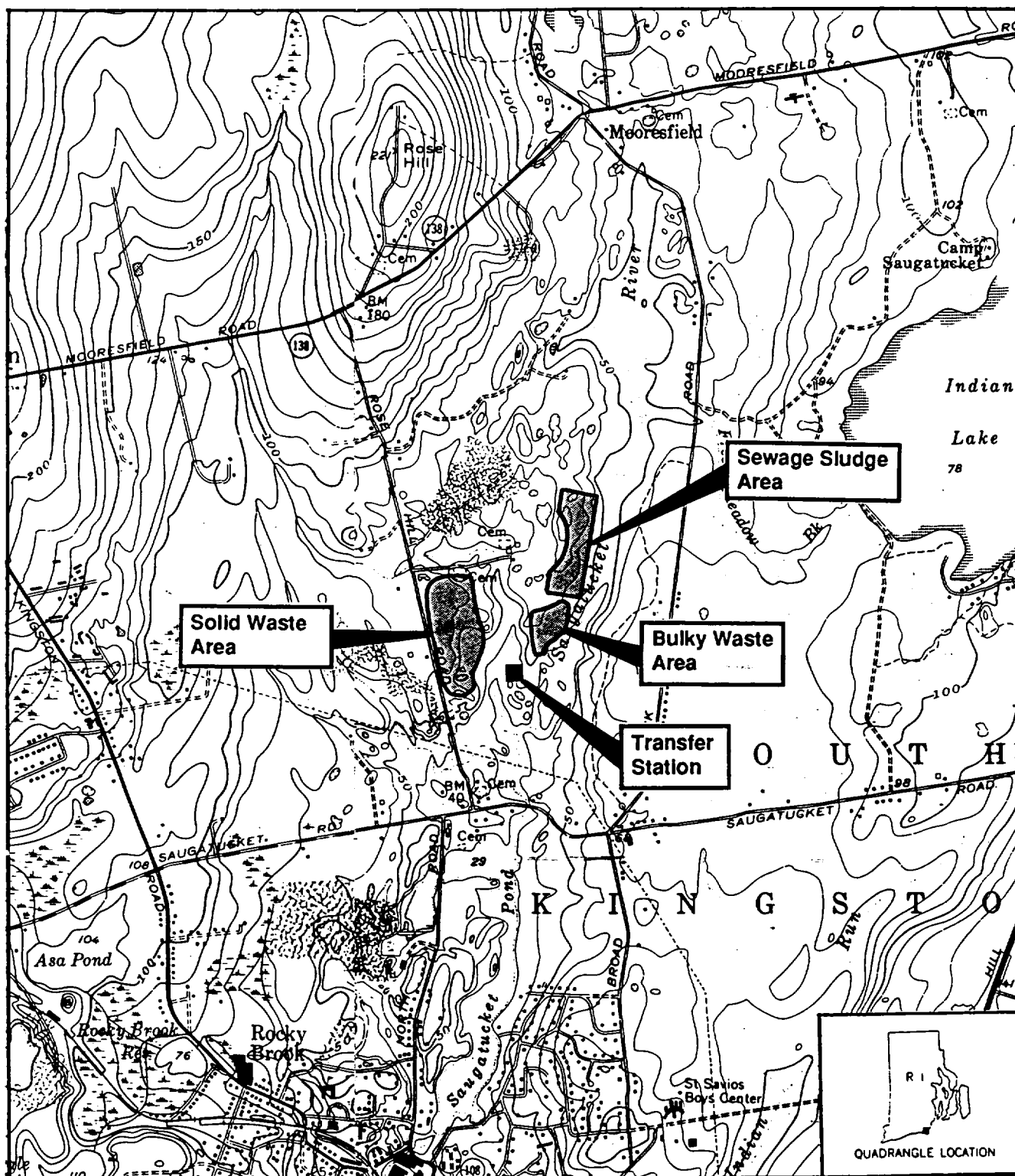
APPENDIX A

**RECORD OF DECISION
Rose Hill Regional Landfill Superfund Site**

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SOURCE: USGS TOPOGRAPHIC MAPS
 KINGSTON, RI, 1970
 NARRAGANSETT PIER, RI, 1975

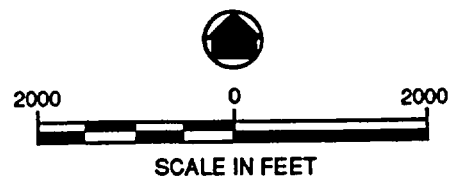


FIGURE 1 LOCATION OF THE ROSE HILL
 REGIONAL LANDFILL SITE

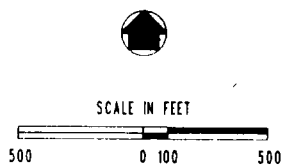
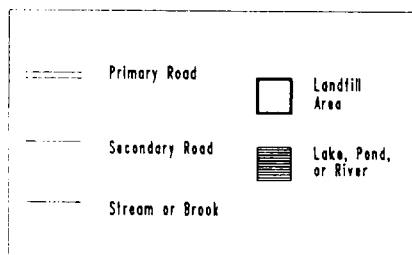
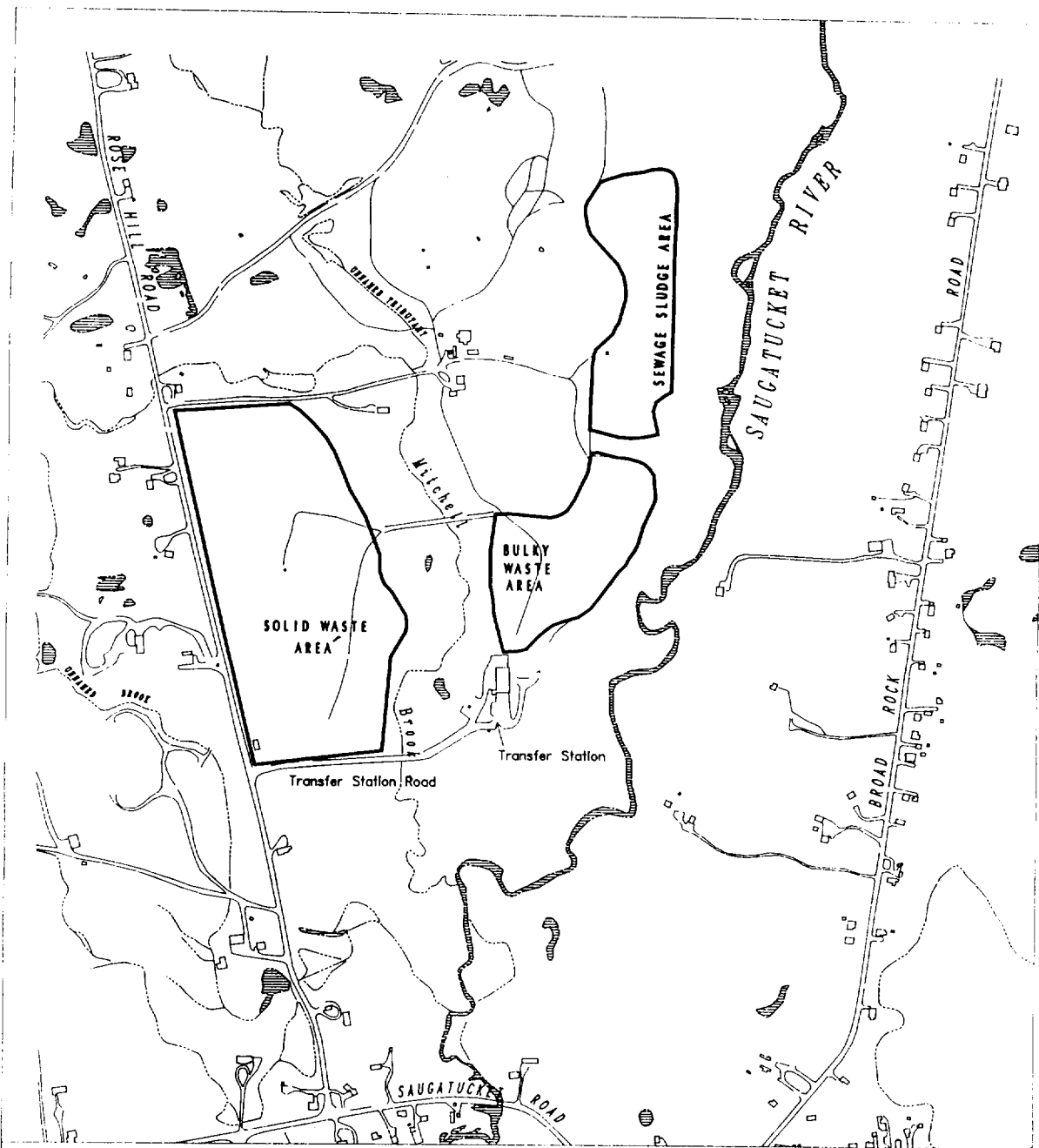


FIGURE 2

ROSE HILL SITE STUDY AREA

ROSE HILL REGIONAL LANDFILL
SOUTH KINGSTOWN, RI

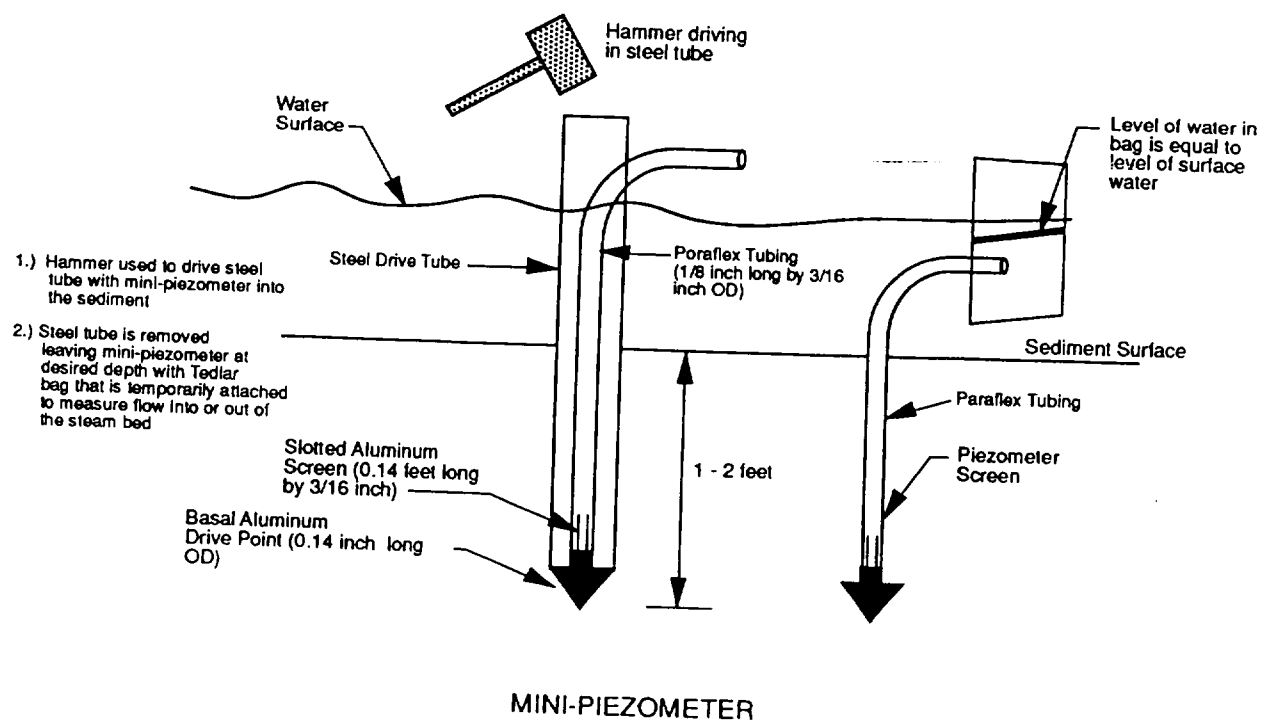
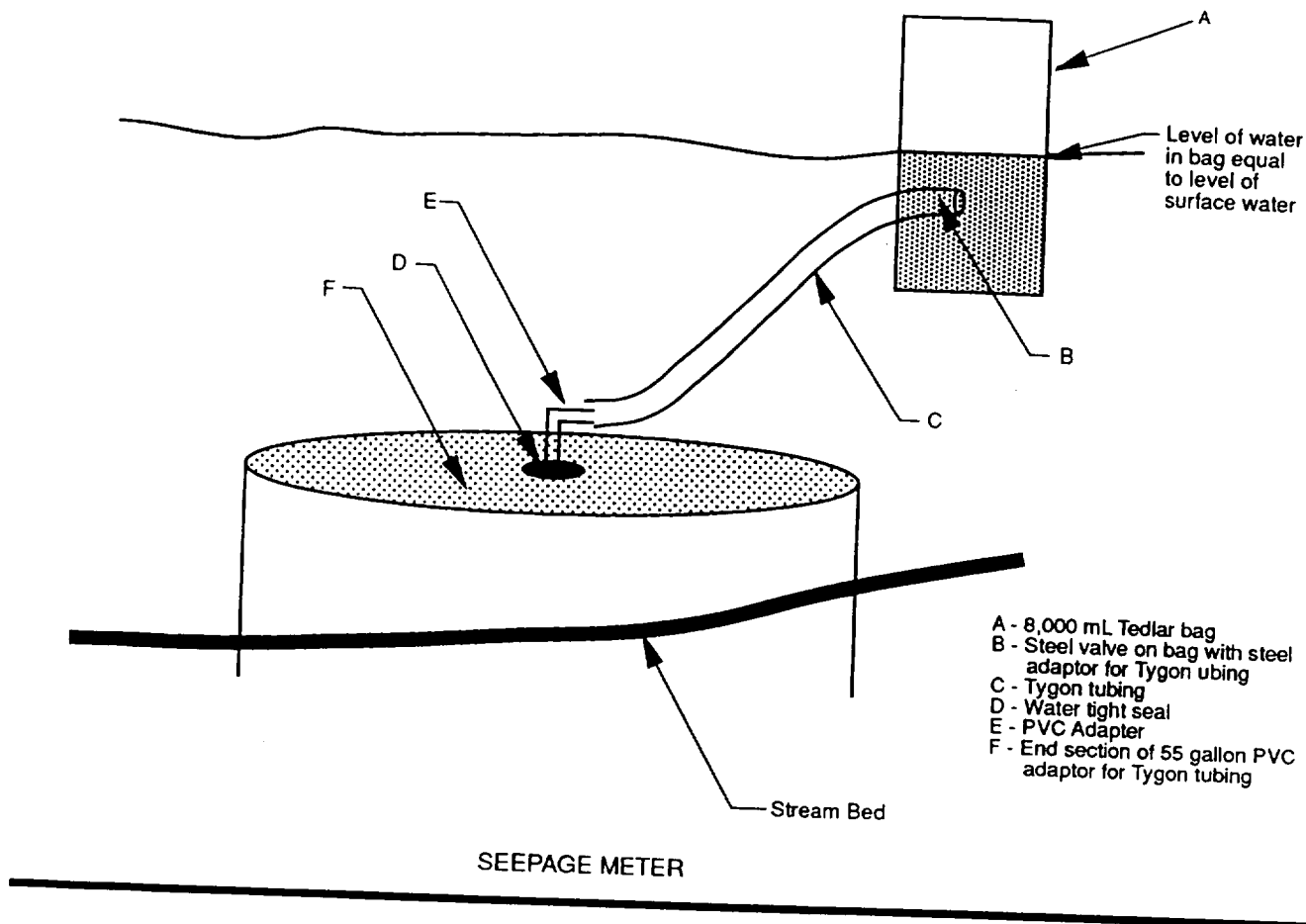


FIGURE 3
SEEPAGE METER AND MINI-PIEZOMETER CONSTRUCTION DETAIL

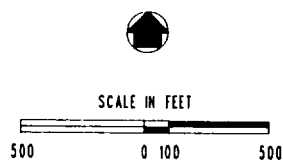
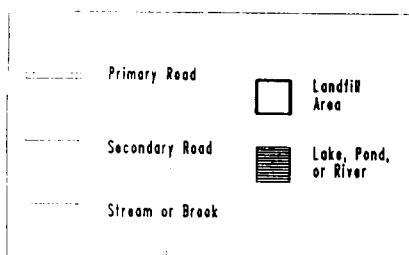
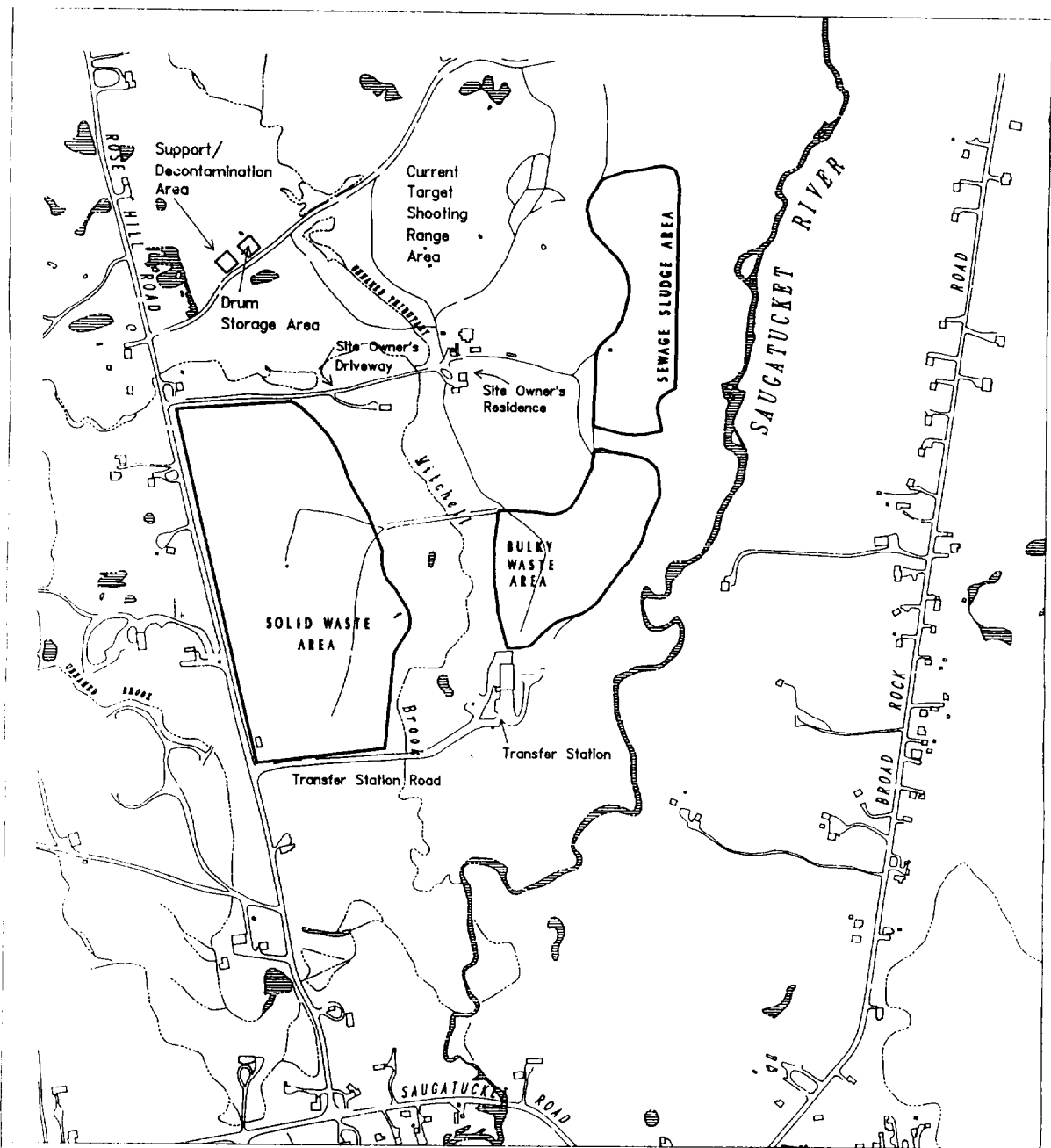
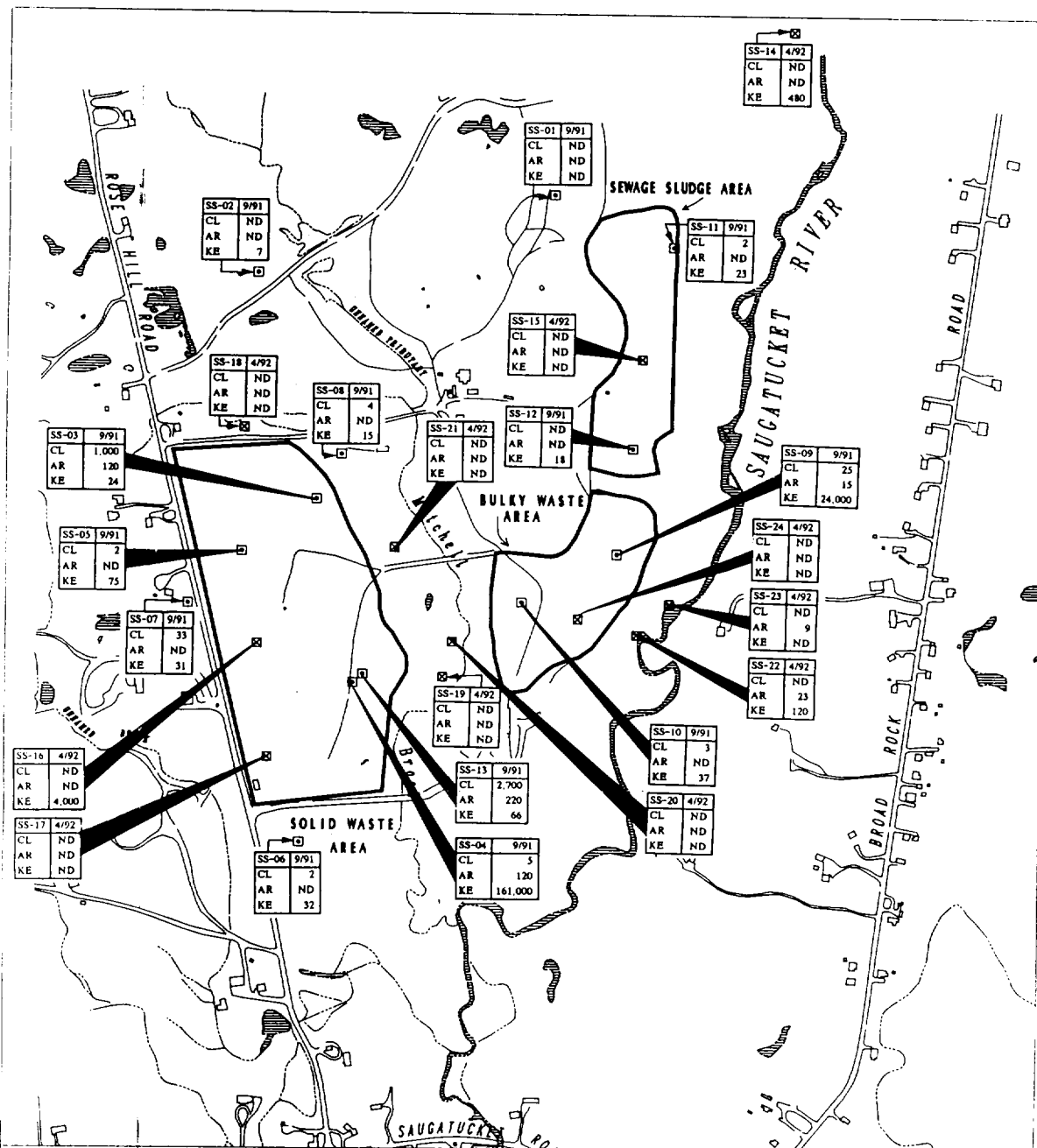


FIGURE 4

SITE MAP

ROSE HILL REGIONAL LANDFILL
SOUTH KINGSTOWN, RI



NOTES:

— — Not Analyzed
 ND - Not Detected
 CL - Total Chlorinated Volatile Organics ($\mu\text{g/kg}$)
 AR - Total Aromatic Organics ($\mu\text{g/kg}$)
 KE - Total Ketones ($\mu\text{g/kg}$)

- - - - - Primary Road
 - - - - - Secondary Road
 - - - - - Stream or Brook
 [Shaded Box] Landfill Area
 [Hatched Box] Lake, Pond, or River
 [Circle with Dot] Surface Soils, 0-6" Sampling Depth
 [Circle with X] Surface Soils, 0-12" Sampling Depth

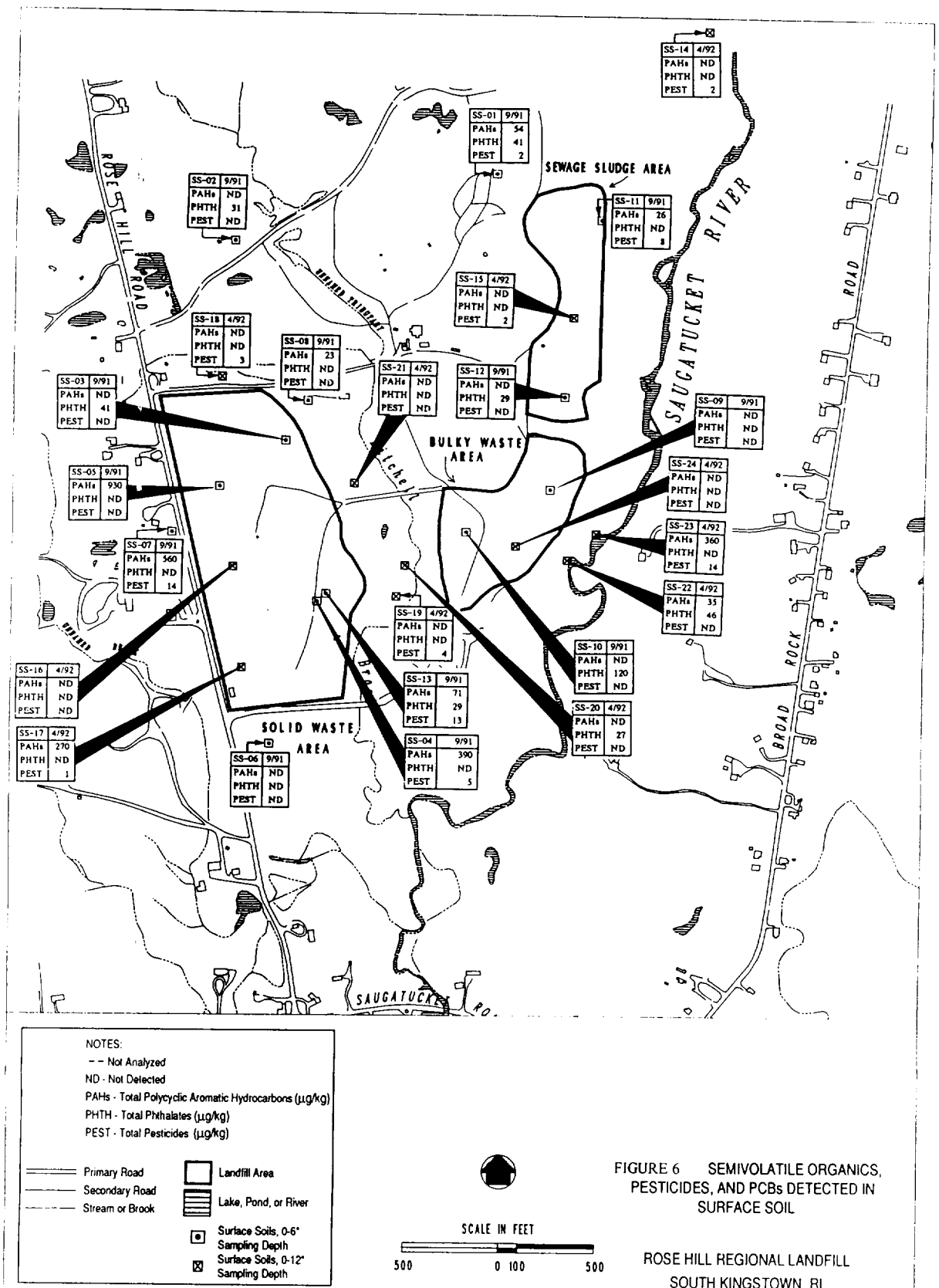


SCALE IN FEET

500 0 100 500

FIGURE 5 VOLATILE ORGANICS DETECTED IN SURFACE SOIL

ROSE HILL REGIONAL LANDFILL
SOUTH KINGSTOWN, RI



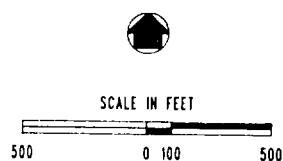
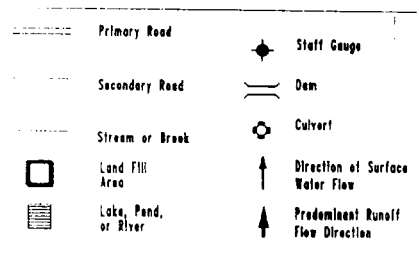
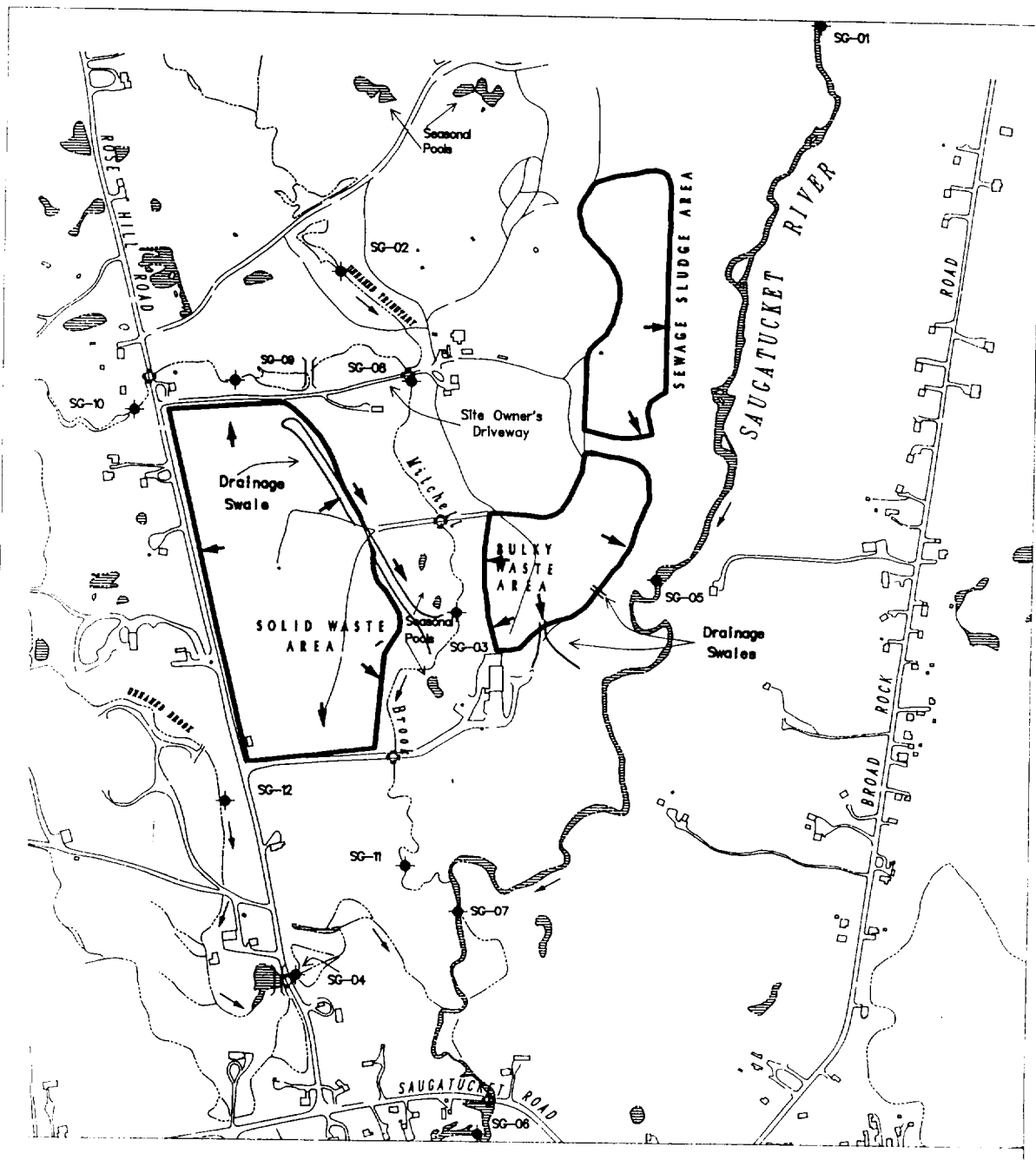
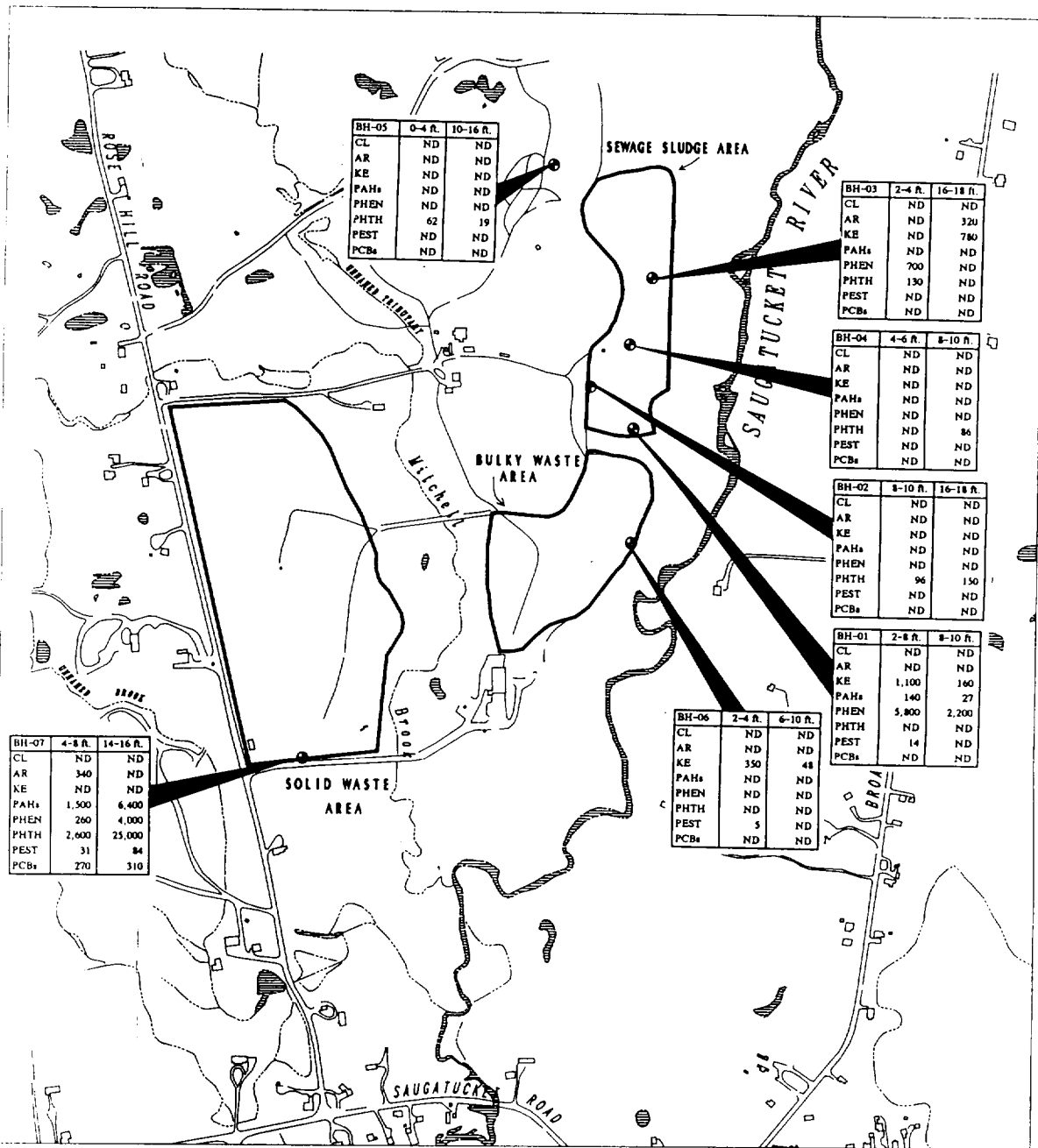


FIGURE 7
SURFACE WATER FLOW MAP

ROSE HILL REGIONAL LANDFILL
SOUTH KINGSTOWN, RI



NOTES: Except for volatile analysis, samples were composited when split-spoon recovery was insufficient.

-- Not Analyzed
 ND - Not Detected

CL - Total Chlorinated Organics ($\mu\text{g/kg}$)
 AR - Total Aromatic Organics ($\mu\text{g/kg}$)
 KE - Total Ketones ($\mu\text{g/kg}$)
 PAHs - Total Polycyclic Aromatic Hydrocarbons ($\mu\text{g/kg}$)
 PHEN - Total Phenols ($\mu\text{g/kg}$)
 PEST - Total Pesticides ($\mu\text{g/kg}$)
 PCBs - Total Polychlorinated Biphenyls ($\mu\text{g/kg}$)

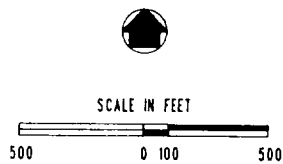
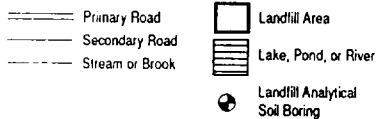
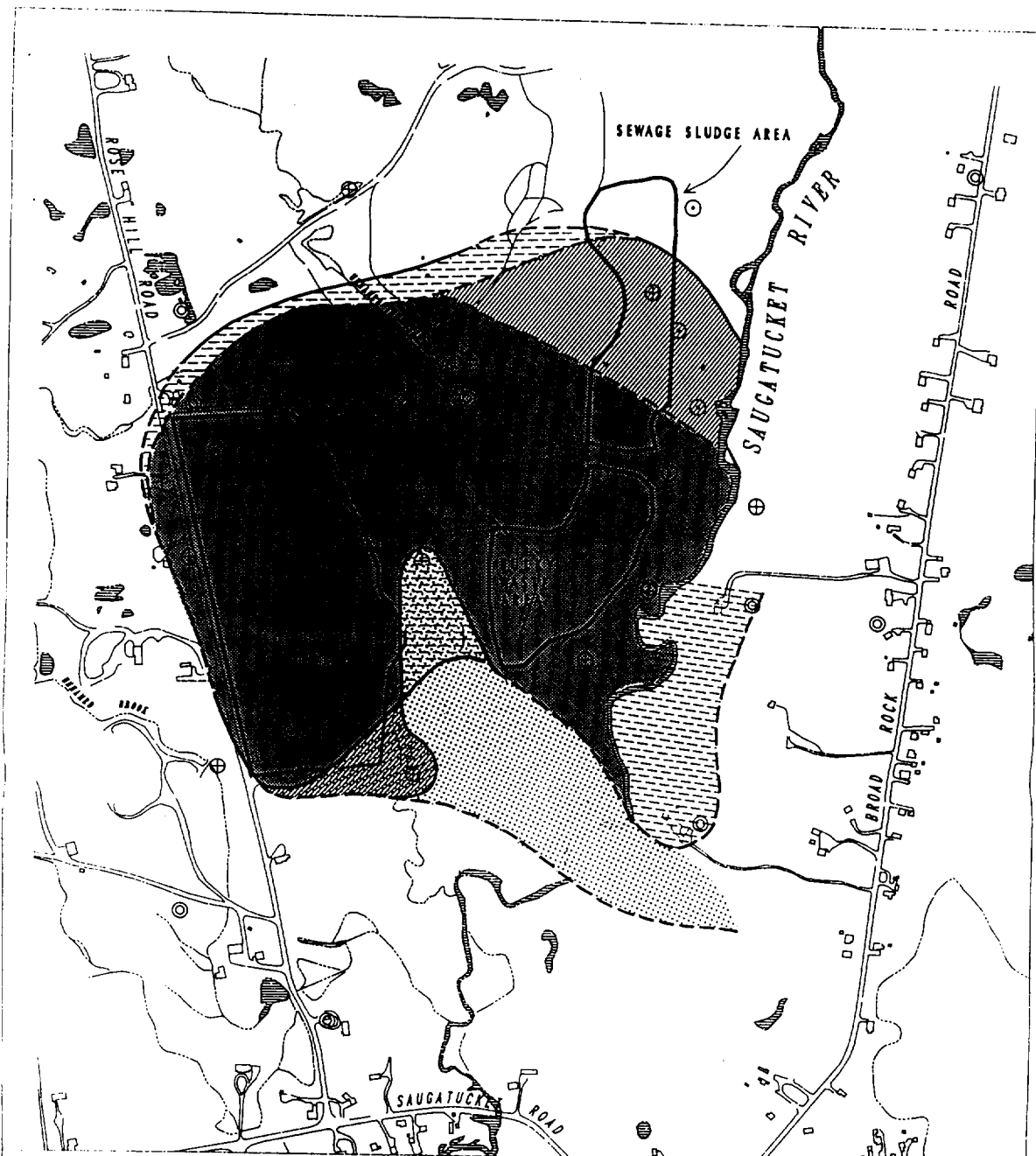


FIGURE 8 ORGANIC COMPOUNDS DETECTED IN SUBSURFACE SOIL

ROSE HILL REGIONAL LANDFILL
 SOUTH KINGSTOWN, RI



NOTE: Extent is based on presence or absence of chlorinated or aromatic volatiles in on-site monitoring wells. Presence was noted if volatile organics were detected at least once during the study period. Bedrock is shown using bedrock residential wells.

- | | |
|------------------------------|--------------------------|
| Shallow Overburden Flow Zone | Primary Road |
| Deep Overburden Flow Zone | Secondary Road |
| Bedrock Flow Zone | Stream or Brook |
| All Three Flow Zones | Landfill Area |
| | Lake, Pond, or River |
| | Existing Monitoring Well |
| | New Monitoring Well |
| | Residential Well |

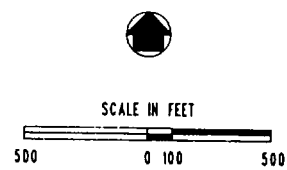
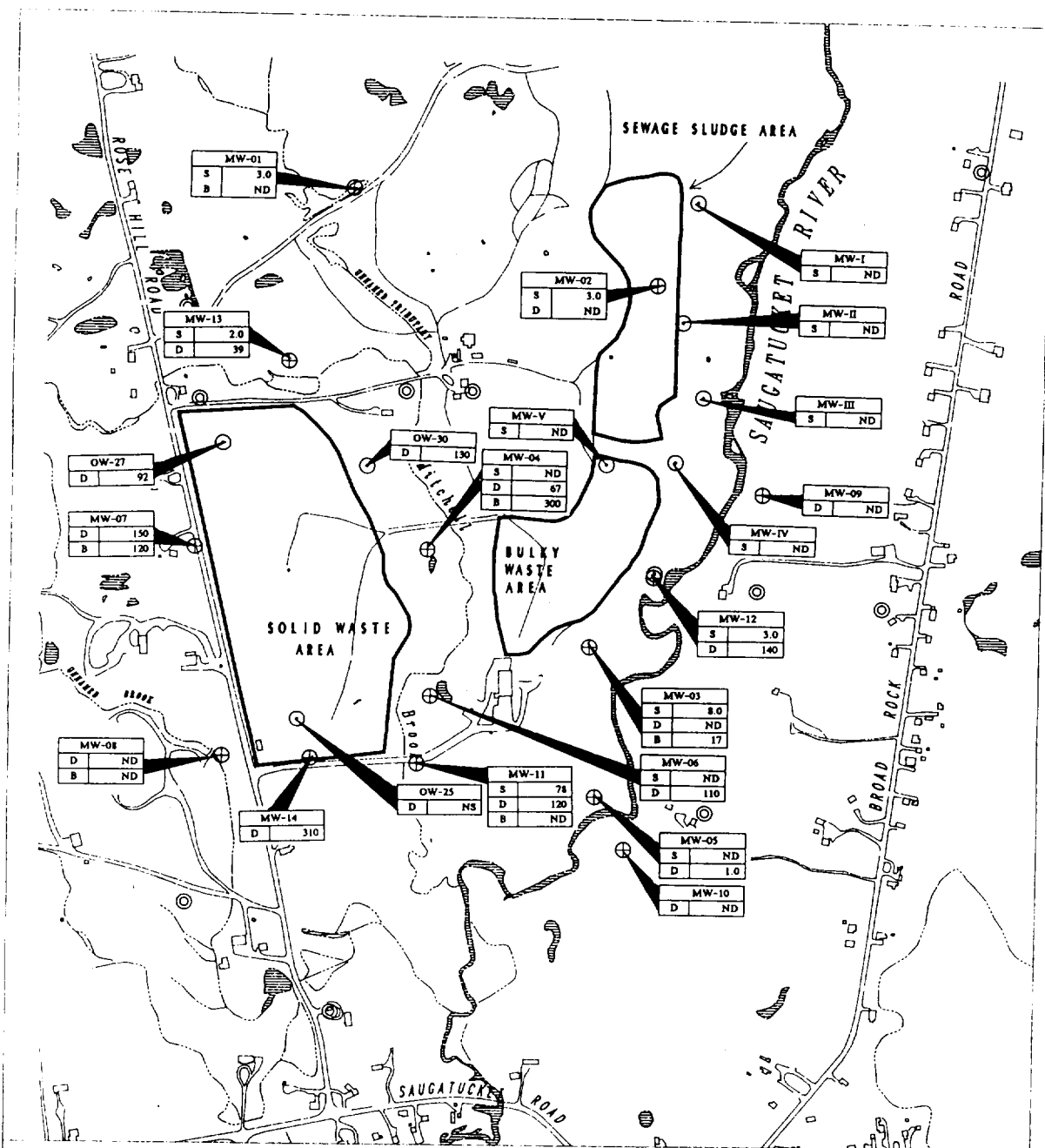


FIGURE 9 ESTIMATED AERIAL
EXTENT OF VOLATILE ORGANICS
IN GROUNDWATER

ROSE HILL REGIONAL LANDFILL
SOUTH KINGSTOWN, RI

METCALF & EDDY



NOTE: The total volatile organic concentrations are presented in $\mu\text{g/l}$, based on data collected in September/October 1991

S Shallow Overburden Well
D Deep Overburden Well
B Bedrock Well
ND Not Detected
NS Not Sampled

Primary Road
Secondary Road
Stream or Brook
Landfill Area
Lake, Pond, or River
Existing Monitoring Well
New Monitoring Well
Residential Well

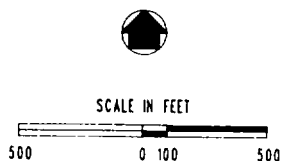
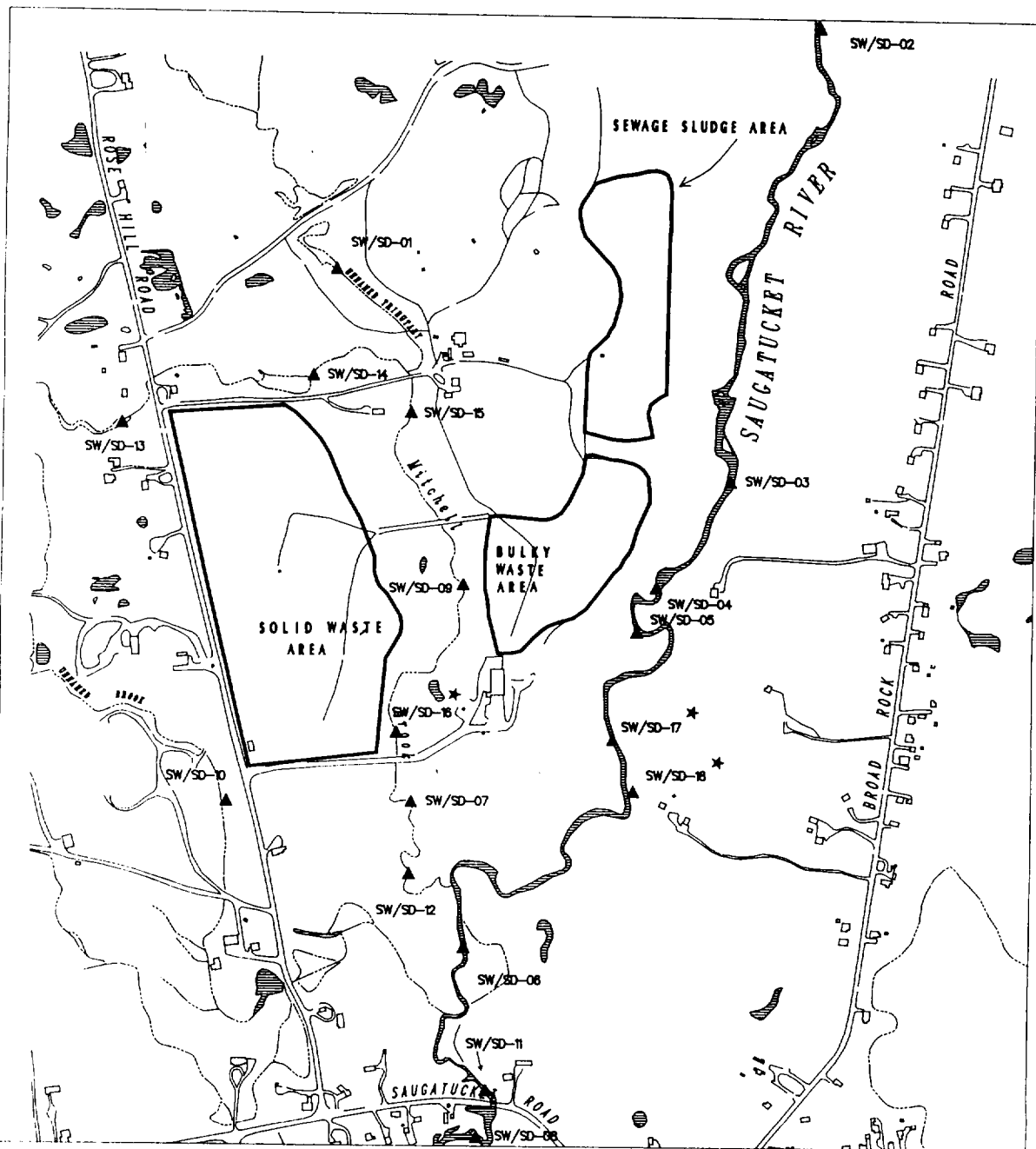


FIGURE 10 VERTICAL DISTRIBUTION OF VOLATILE ORGANICS IN GROUNDWATER

ROSE HILL REGIONAL LANDFILL
SOUTH KINGSTOWN, RI

METCALF & EDDY



Note: * - These three locations were added in May 1992 as part of the ecological investigation.

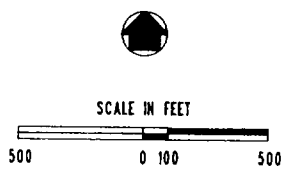
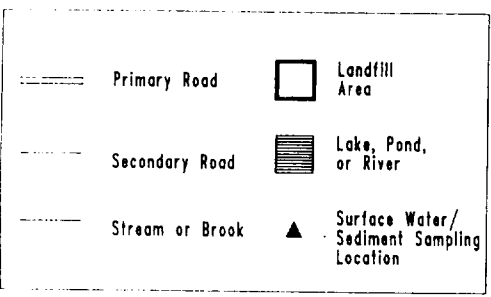
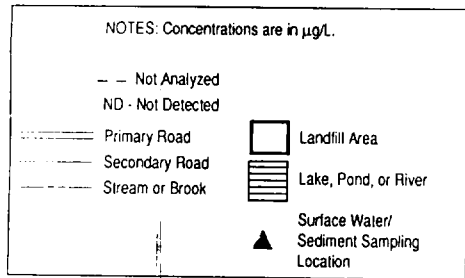
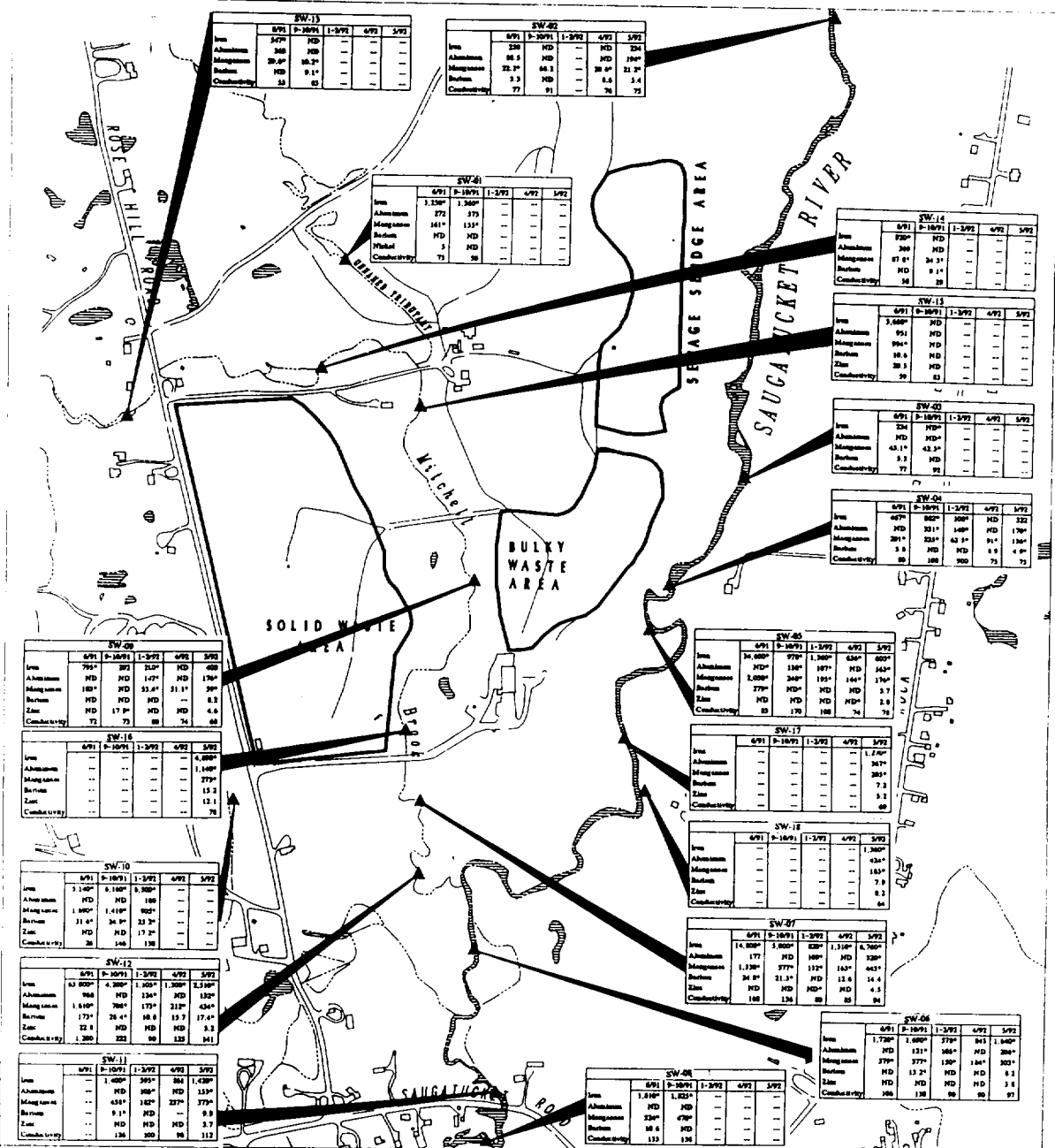


FIGURE 11
SURFACE WATER/SEDIMENT
SAMPLING LOCATIONS

ROSE HILL REGIONAL LANDFILL
SOUTH KINGSTOWN, RI



ROSE HILL REGIONAL LANDFILL
SOUTH KINGSTOWN, RI



NOTES: Metal concentrations provided for unfiltered samples in µg/L and specific conductance in µmhos/cm

ND - Not Analyzed

ND - Not Detected

• Also Detected in Filtered Sample

Primary Road
Secondary Road
Stream or Brook
Landfill Area
Lake, Pond, or River
Surface Water/
Sediment Sampling Location

SCALE IN FEET

500 0 100 500

FIGURE 13 INORGANICS DETECTED IN SURFACE WATER (UNFILTERED)

ROSE HILL REGIONAL LANDFILL
SOUTH KINGSTOWN, RI

METCALF & EDDY

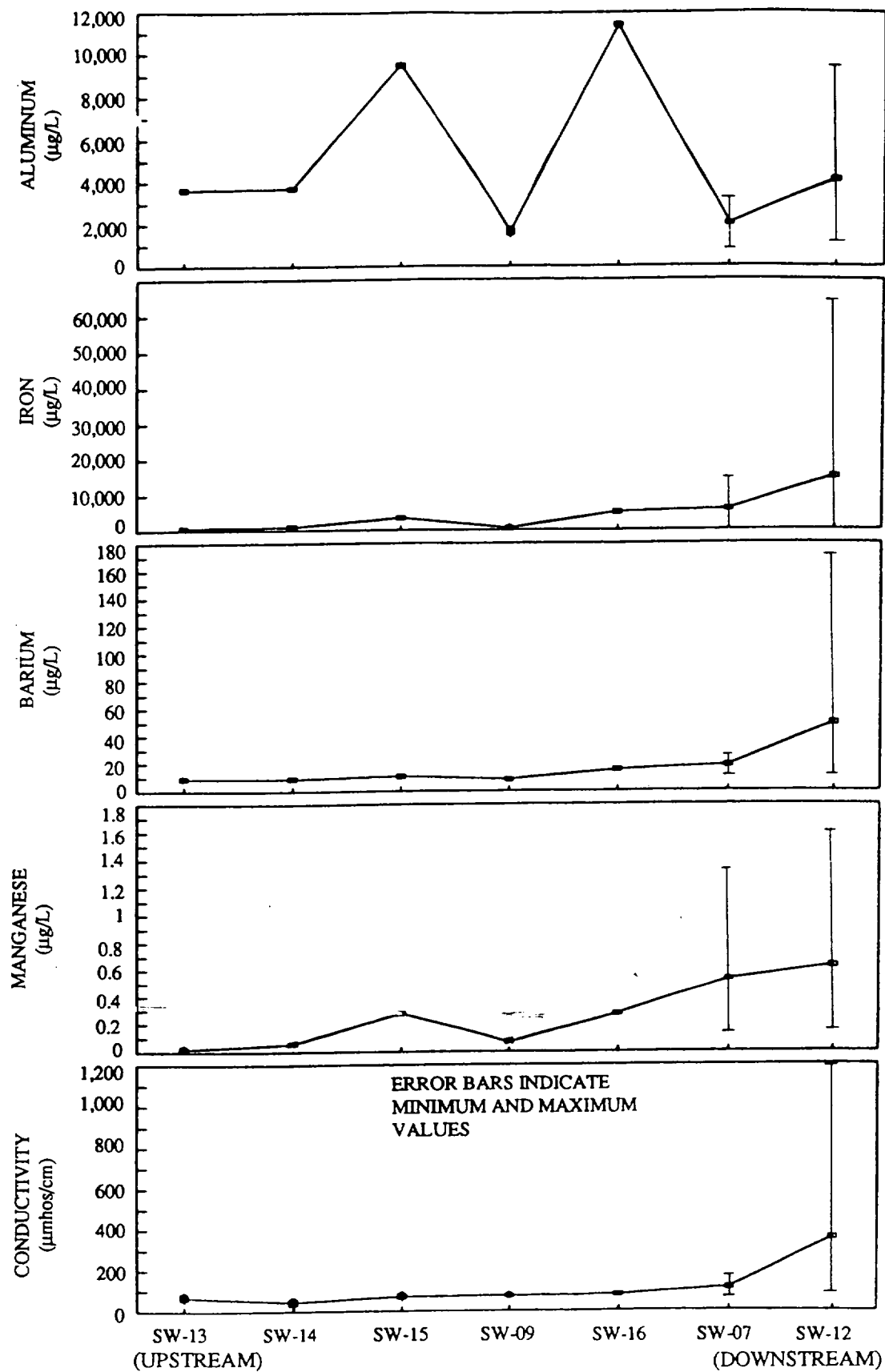


FIGURE 14
METAL TRENDS IN MITCHELL BROOK SURFACE WATER

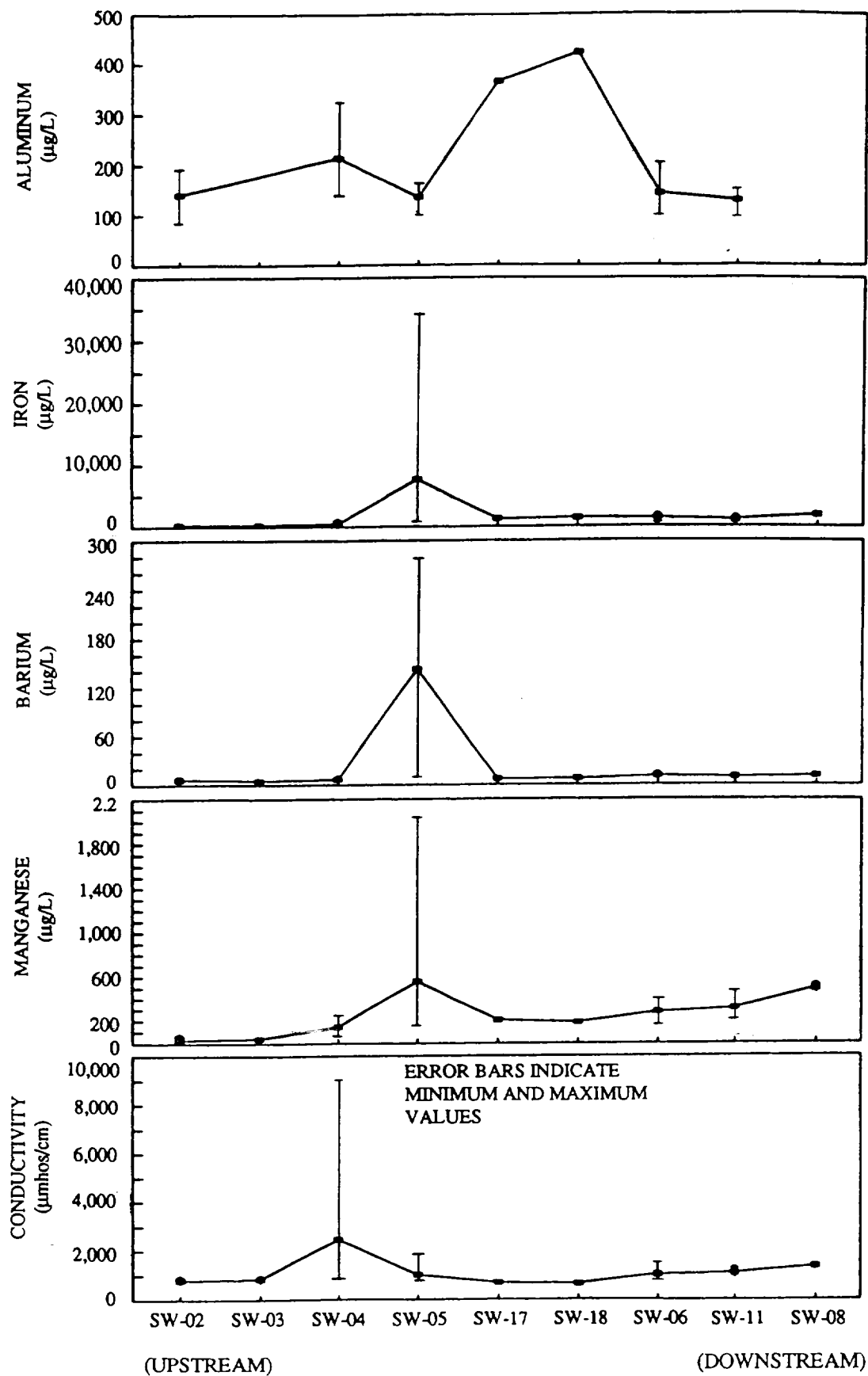
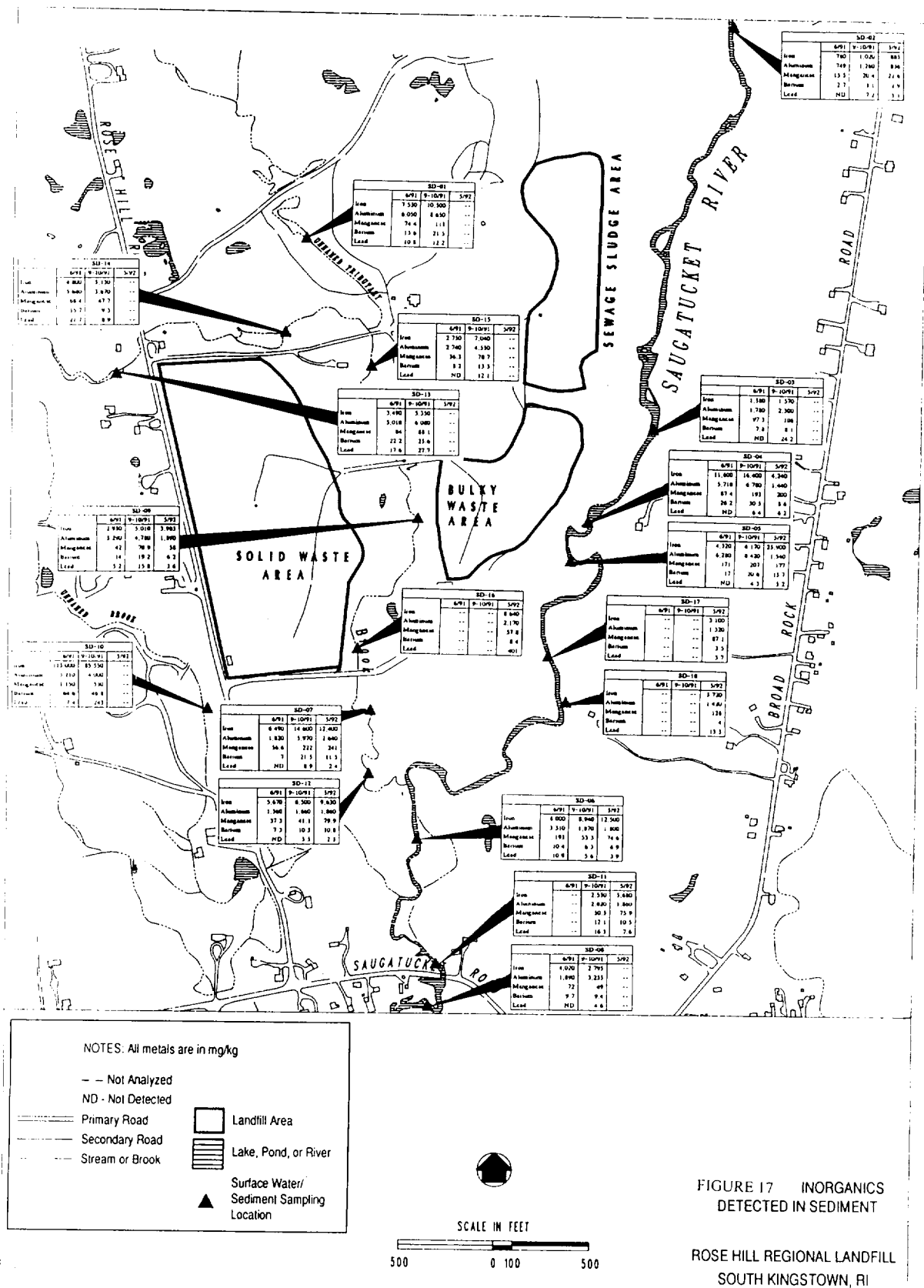


FIGURE 15
METAL TRENDS IN SAUGATUCKET RIVER SURFACE WATER



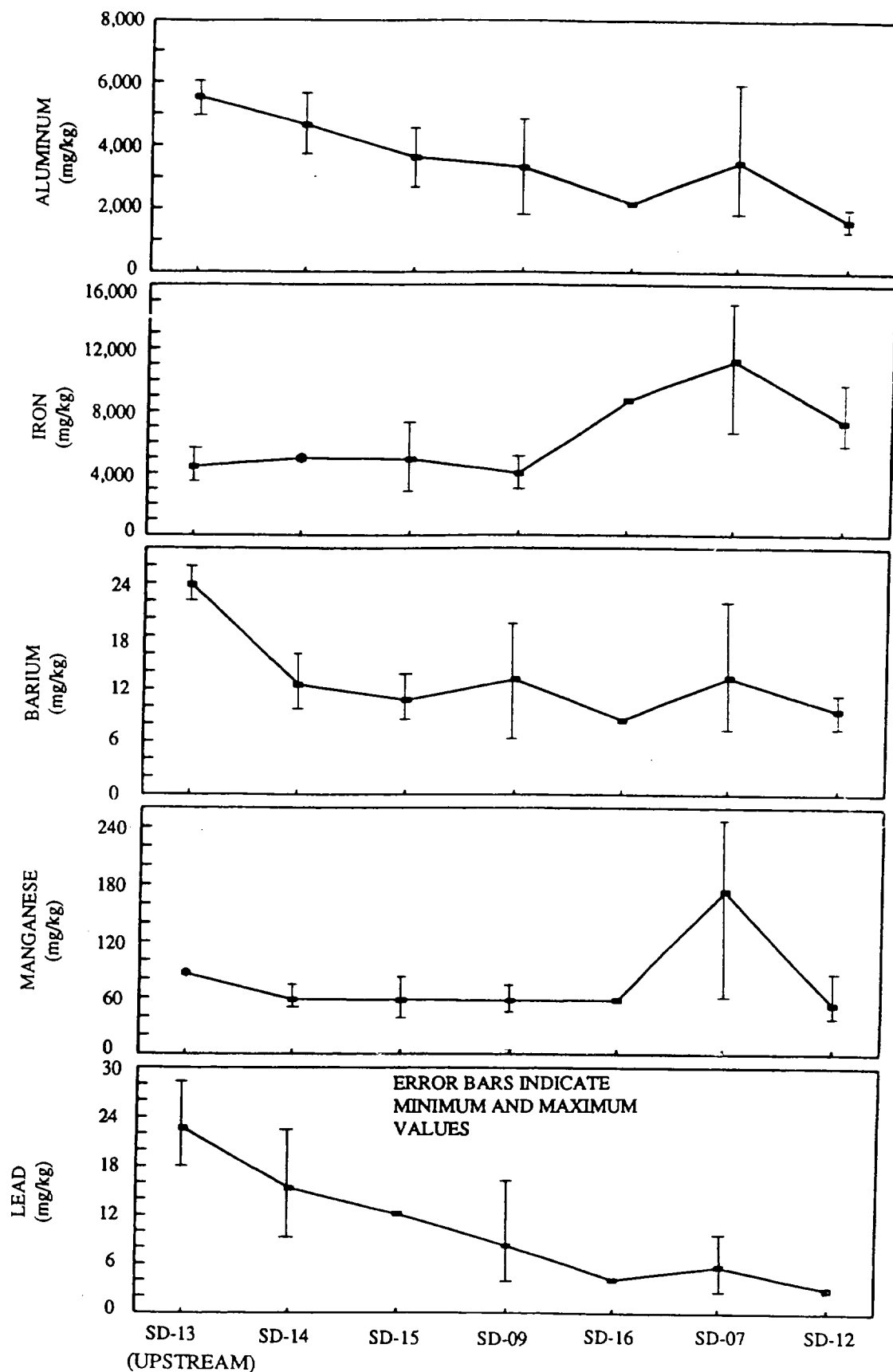


FIGURE 18
METAL TRENDS IN MITCHELL BROOK SEDIMENT

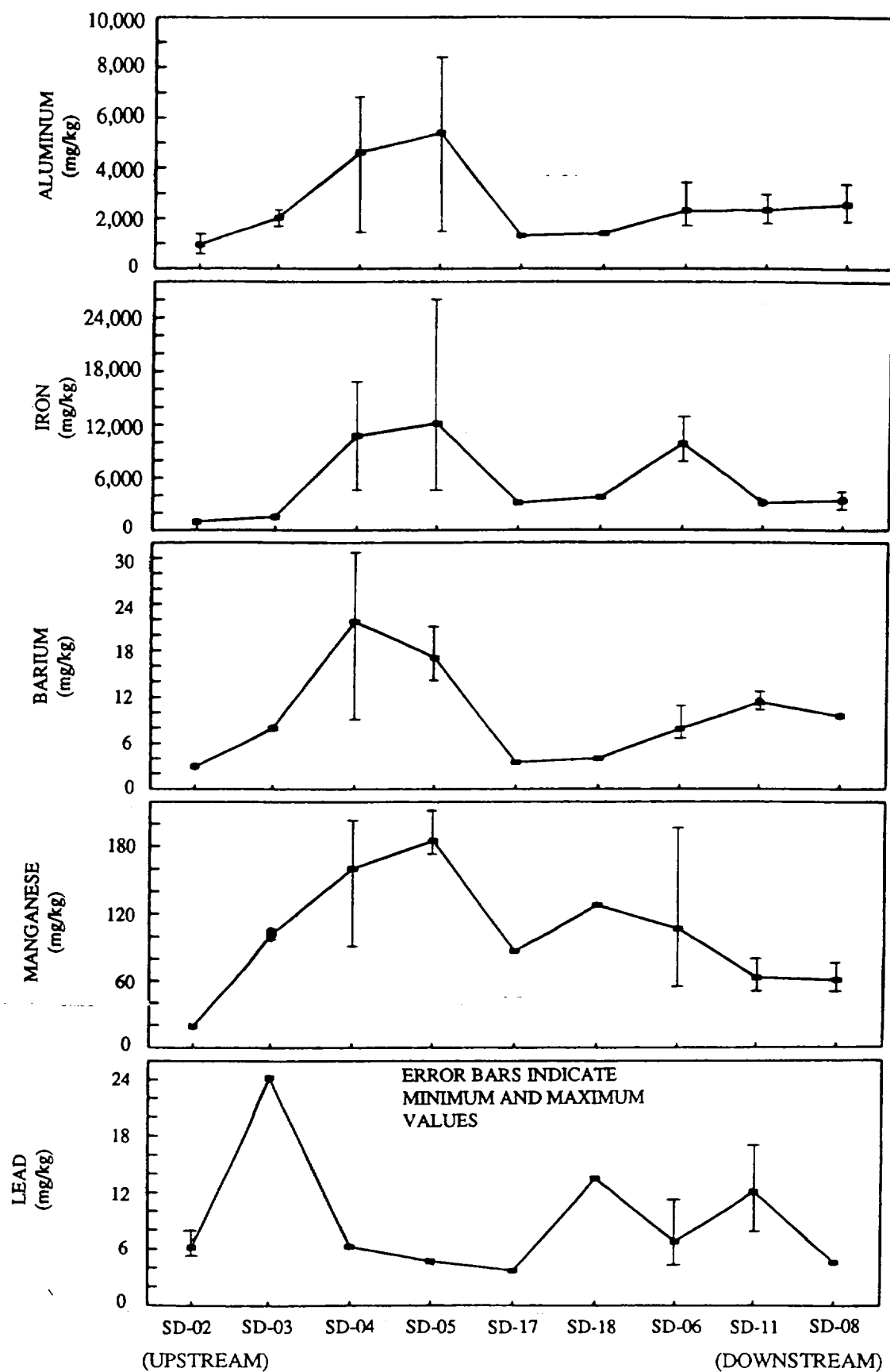


FIGURE 19
METAL TRENDS IN SAUGATUCKET RIVER SEDIMENT

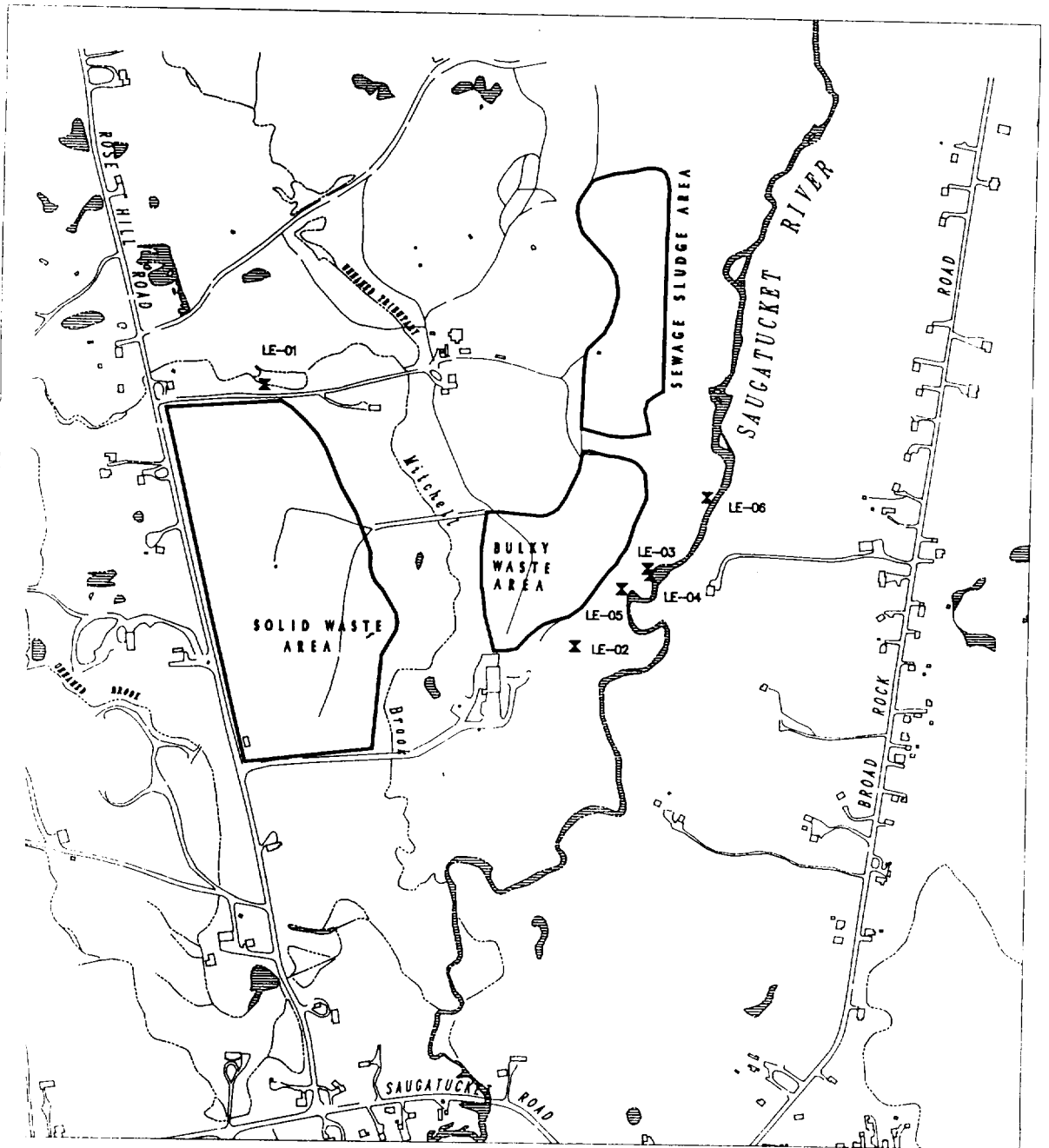
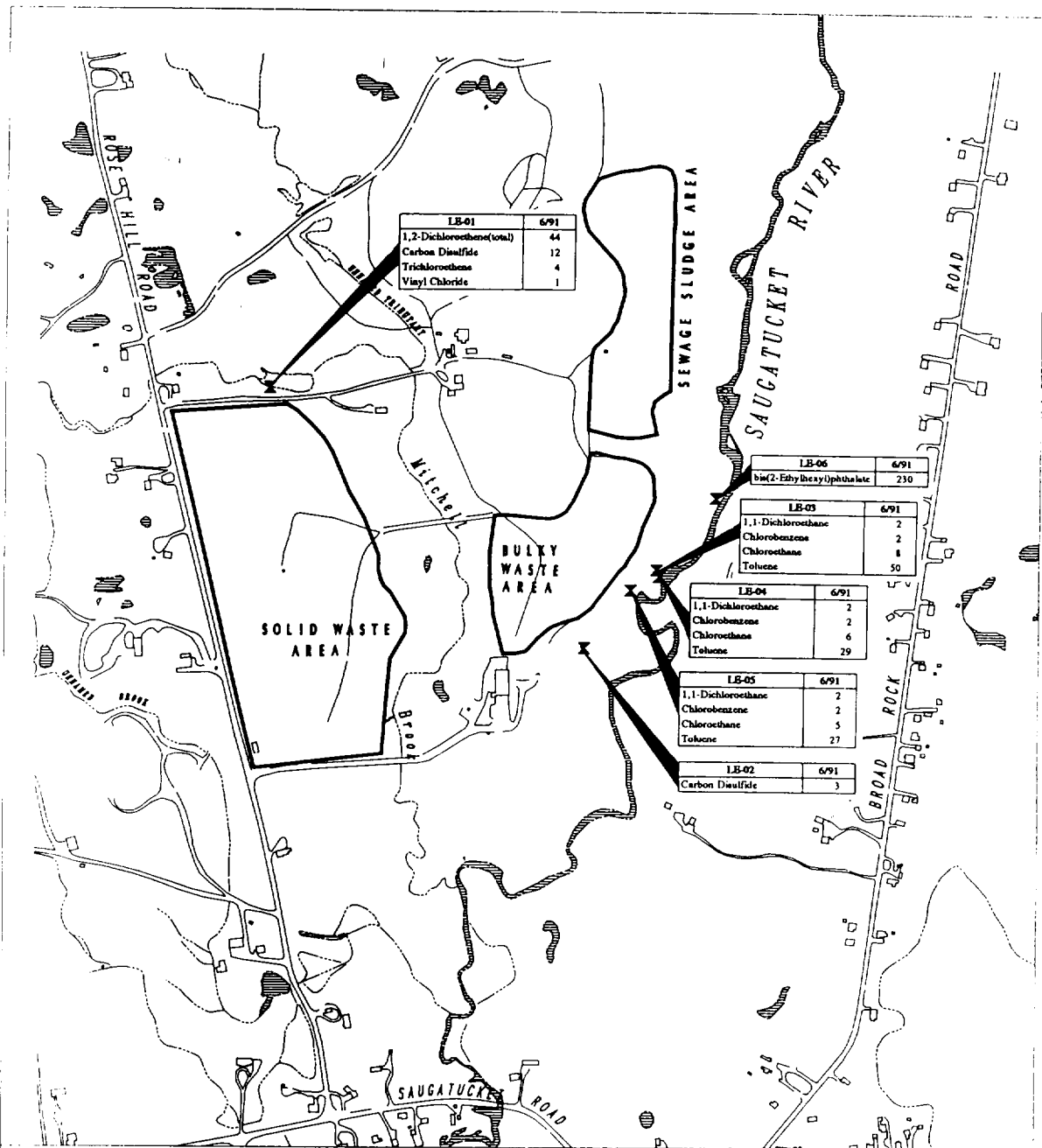


FIGURE 20

LEACHATE SAMPLING LOCATIONS

ROSE HILL REGIONAL LANDFILL
SOUTH KINGSTOWN, RI



NOTES:

All concentrations presented in µg/L

- - - Not Analyzed

ND - Not Detected

Primary Road	Landfill Area
Secondary Road	Lake, Pond, or River
Stream or Brook	Leachate Sampling Location

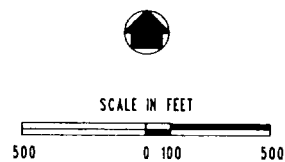
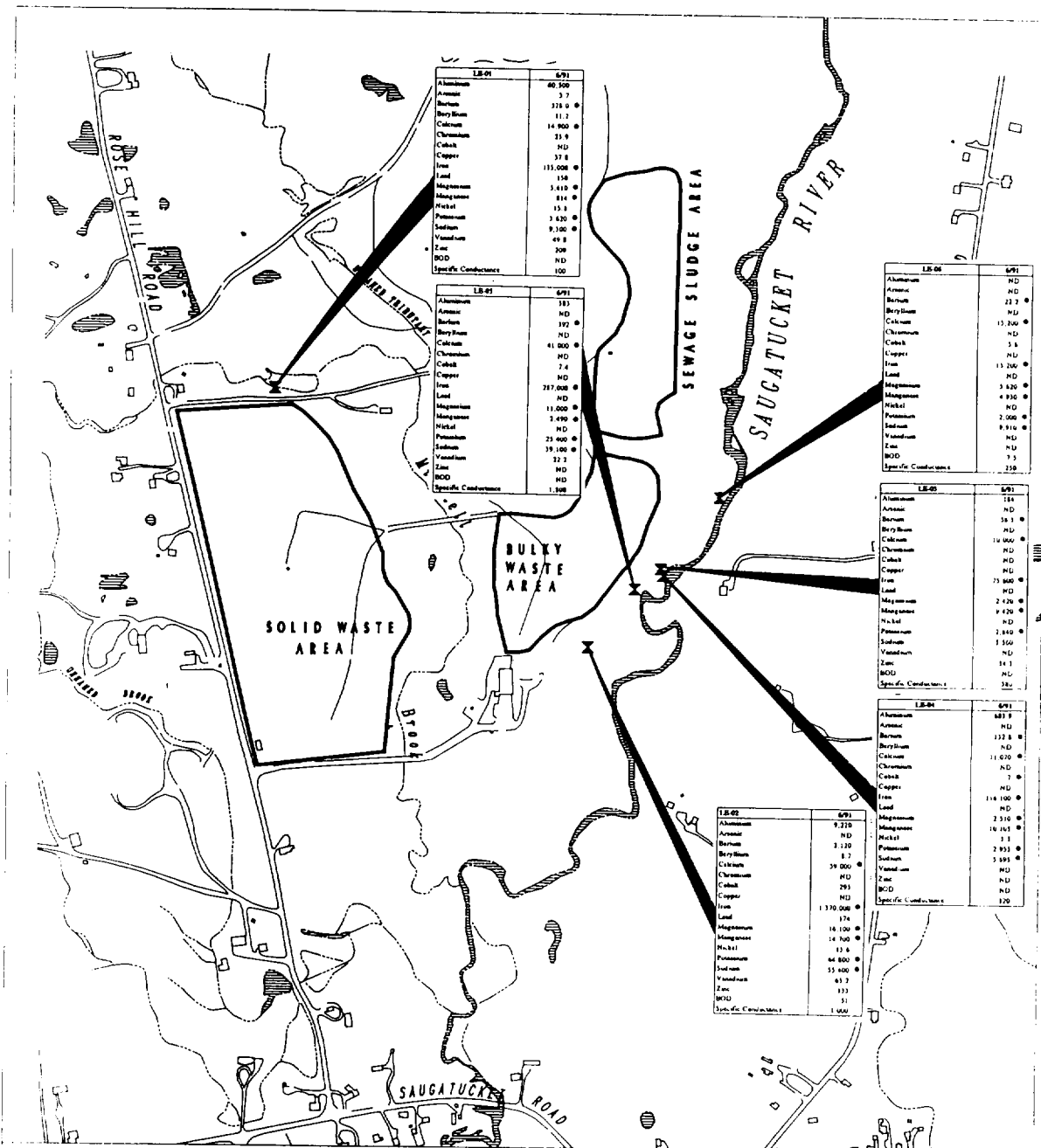


FIGURE 21 ORGANIC COMPOUNDS
DETECTED IN LEACHATE

ROSE HILL REGIONAL LANDFILL
SOUTH KINGSTOWN, RI



NOTES: Unfiltered metal concentrations and BOD (biochemical oxygen demand) are presented in µg/L. Specific conductance is presented in µmhos/cm

— Not Analyzed

ND - Not Detected

• Also Detected in Filtered Sample

Primary Road

Secondary Road

Stream or Brook

Landfill Area

Lake, Pond, or River

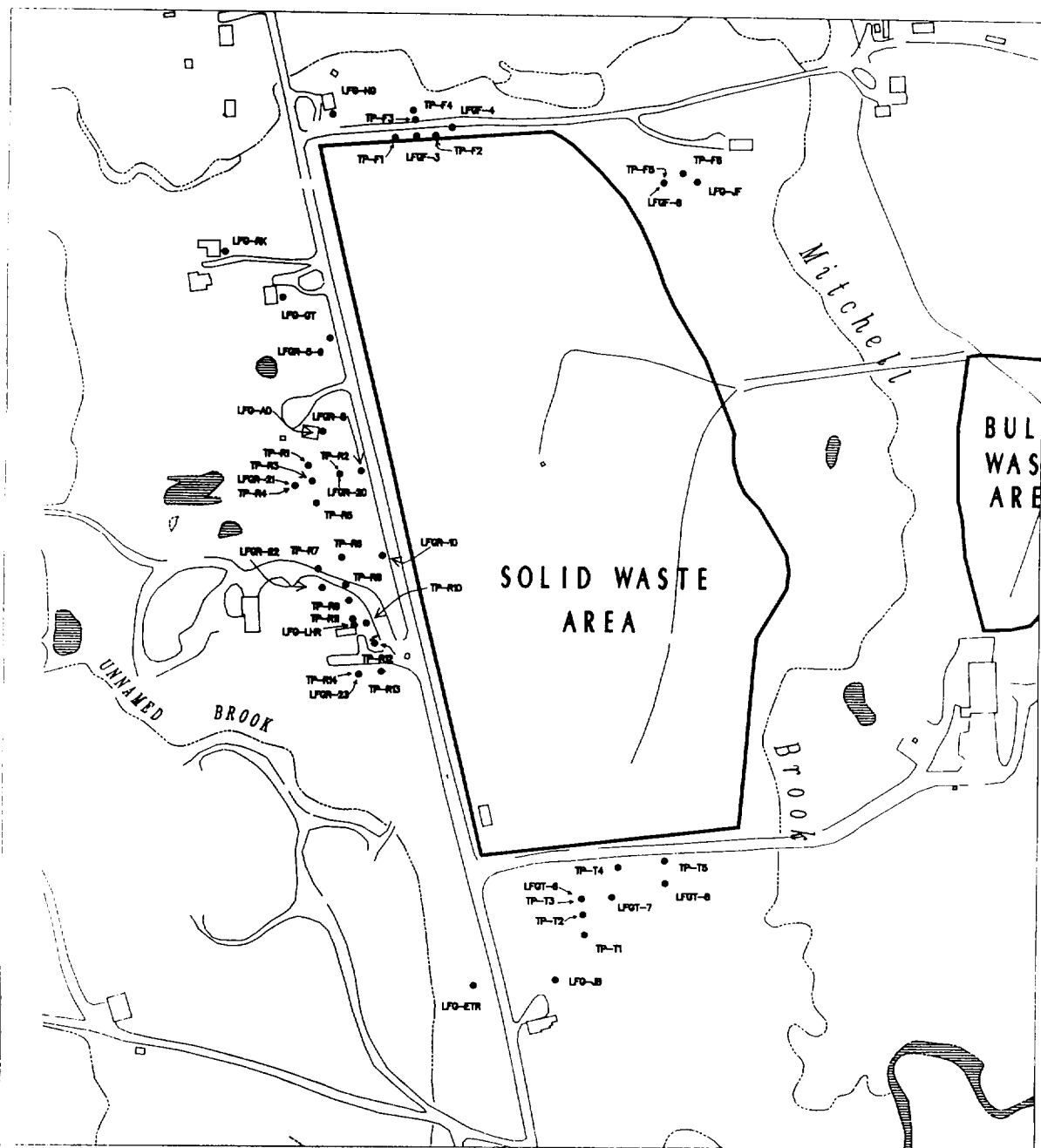
Leachate Sampling Location

SCALE IN FEET

500 0 100 500

FIGURE 22 INORGANICS DETECTED IN LEACHATE

ROSE HILL REGIONAL LANDFILL
SOUTH KINGSTOWN, RI



NOTES: LFG - Permanent points.
 TP - Temporary points sampled only in December, 1991.
 Some points have both an LFG and a TP label. These points were first sampled as temporary points and then installed as permanent sampling locations.

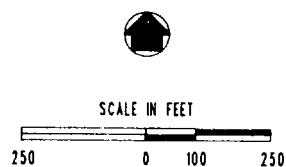
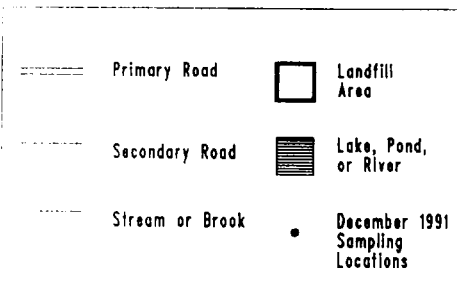


FIGURE 23

LANDFILL GAS LOCATIONS SAMPLED IN DECEMBER, 1991

ROSE HILL REGIONAL LANDFILL
 SOUTH KINGSTOWN, RI

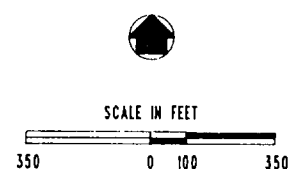
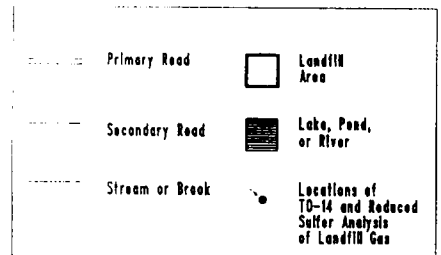
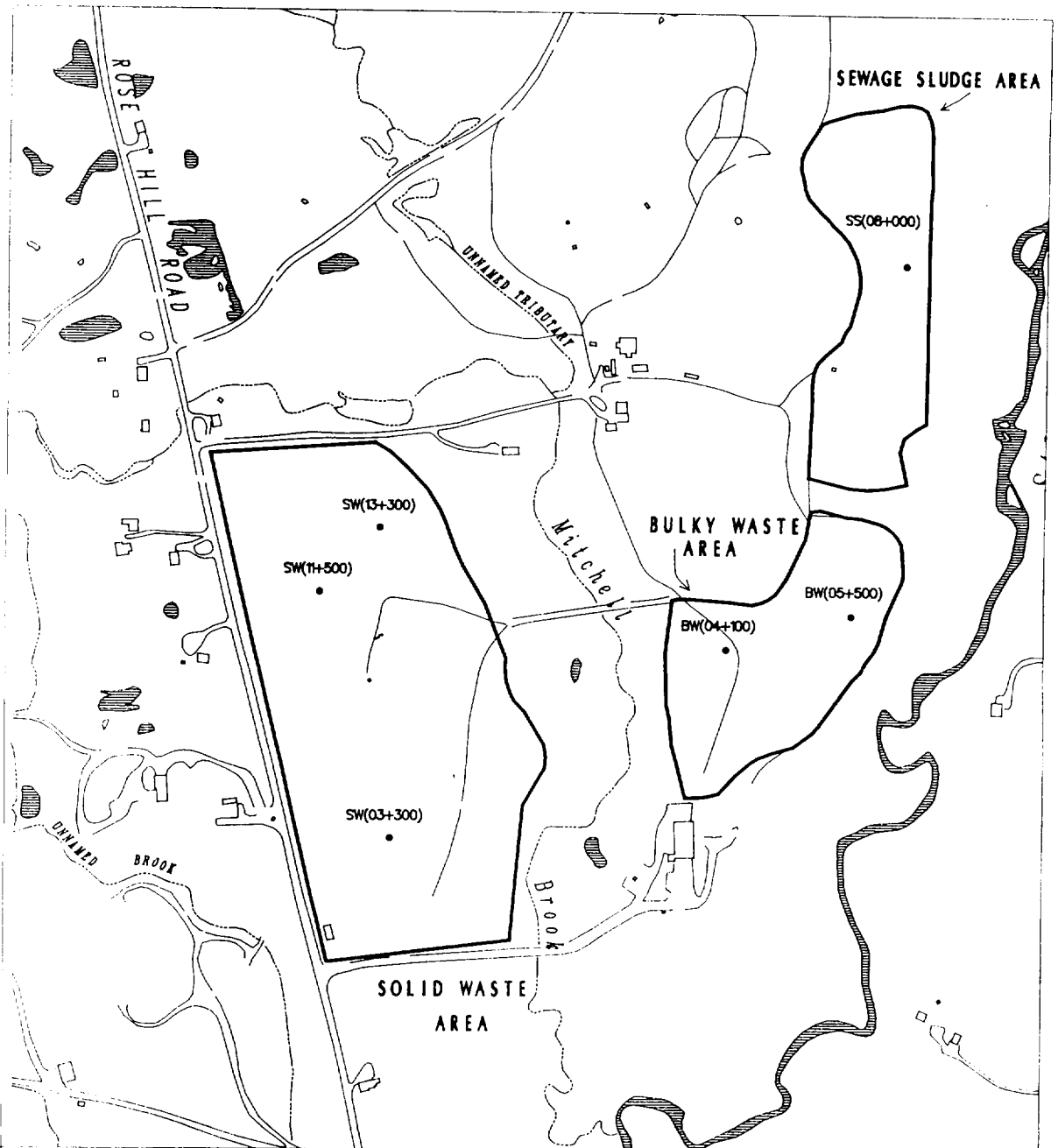
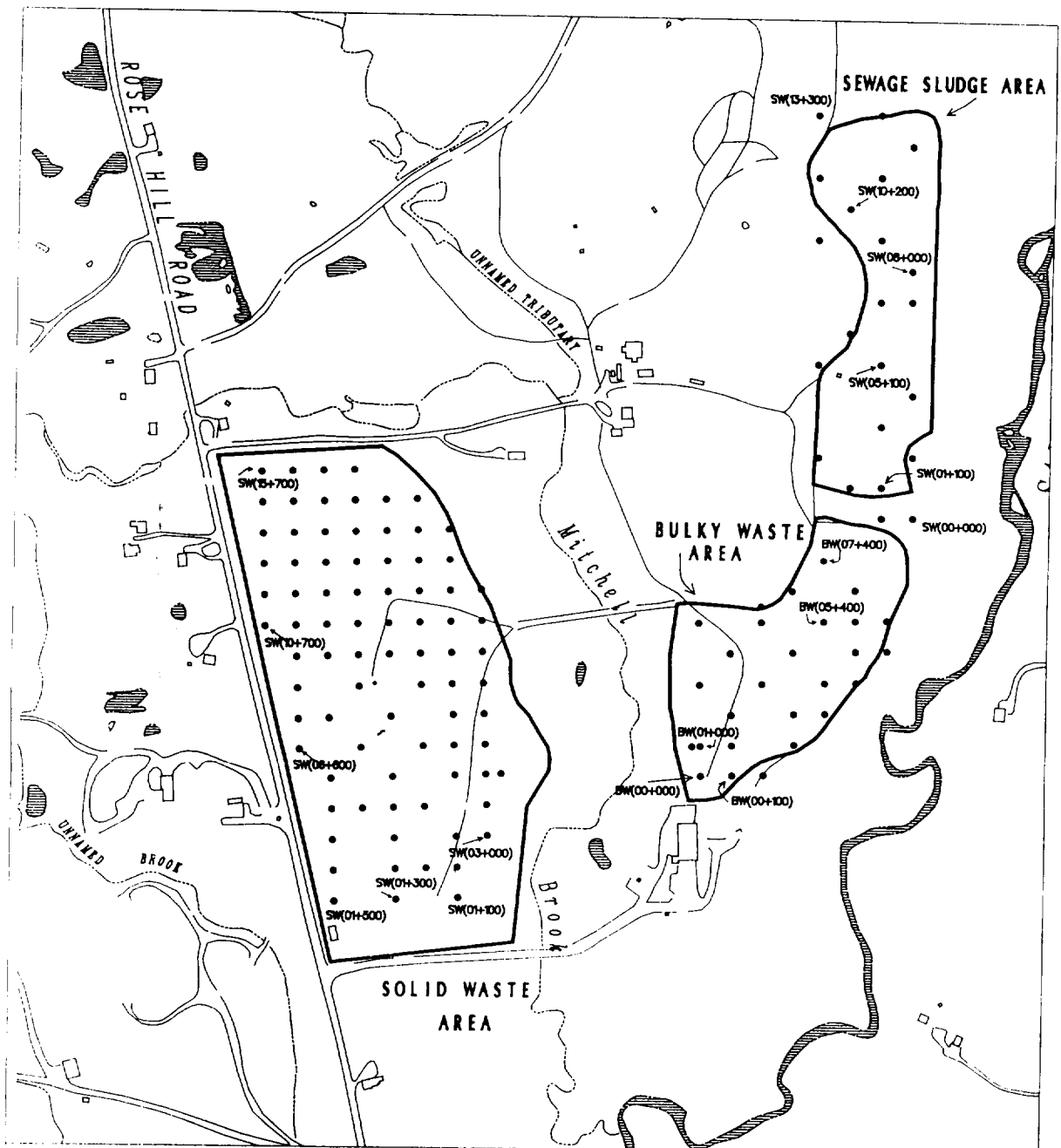


FIGURE 24

T0-14 and Reduced Sulfur Analysis Sampling Locations

ROSE HILL REGIONAL LANDFILL
SOUTH KINGSTOWN, RI



Note Not all points are labeled due to limitations in the available space.
Sampling locations were approximately based on a 100-foot-by-100-foot grid.

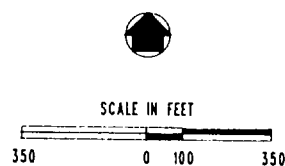
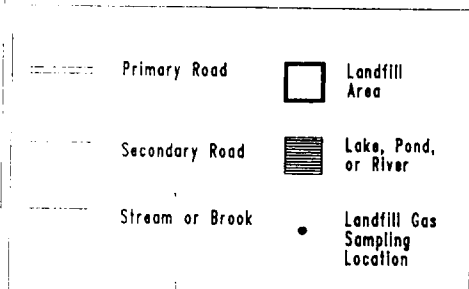
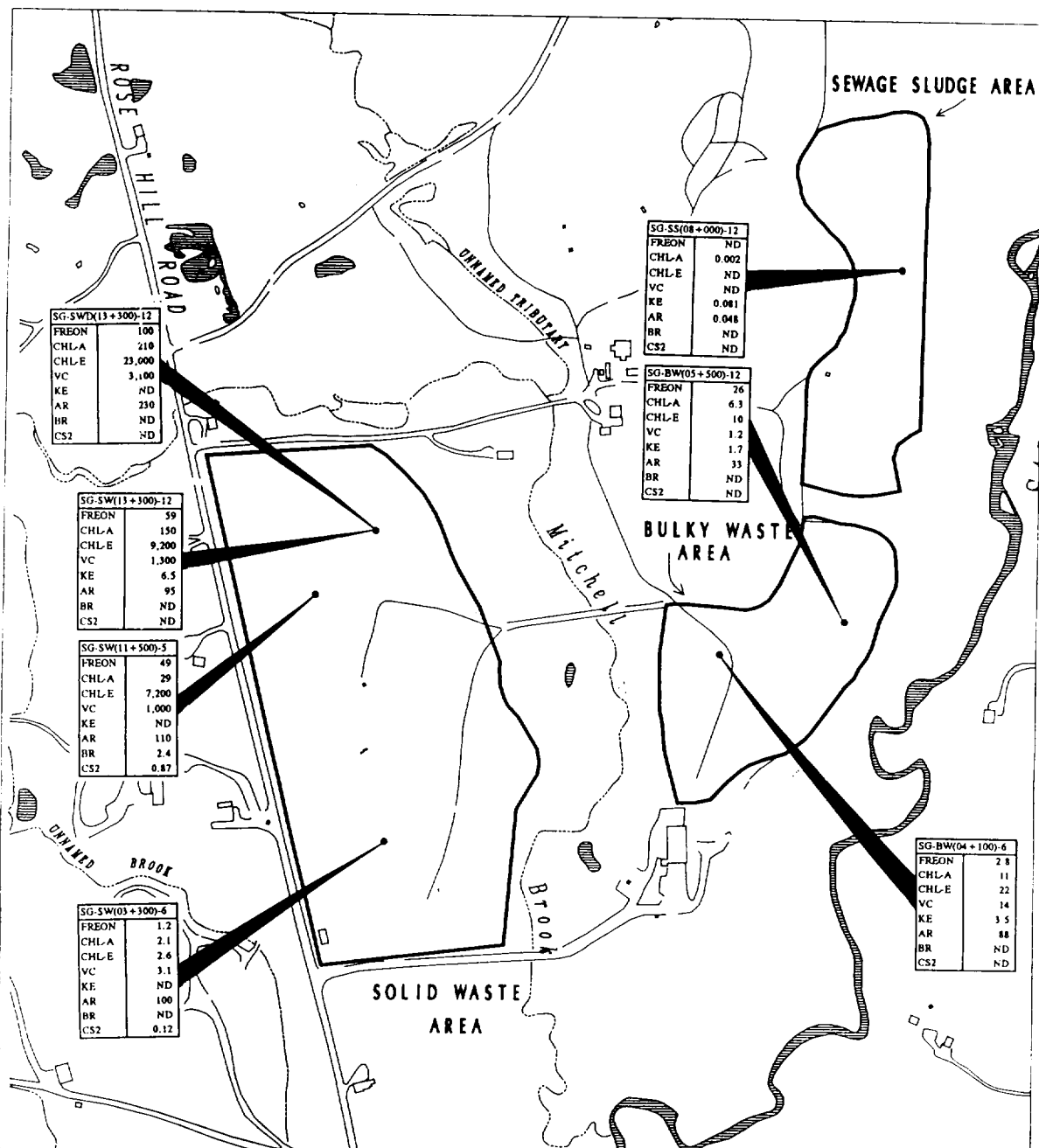


FIGURE 25
TEMPORARY LANDFILL GAS
SAMPLING LOCATIONS SAMPLED
IN JUNE, 1991

ROSE HILL REGIONAL LANDFILL
SOUTH KINGSTOWN, RI

WETCALF & EDDY

NOTES: LFG - Permanent points.
TP - Temporary points sampled only in December, 1991.
Some points have both an LFG and a TP label. These points were first sampled as temporary points and then installed as permanent sampling locations.



NOTES: All results reported in mg/m³

— — Not Analyzed

CHL - A - Chlorinated Alkanes

CHL - E - Chlorinated Alkenes

VC - Vinyl Chloride

KE - Total Ketones

AR - Total Aromatics

BR - Total Brominated Compounds

CS2 - Carbon Disulfide

Primary Road

Secondary Road

Stream or Brook

Landfill Area

Lake, Pond, or River

Locations of TO-14
and Reduced Sulfur
Analysis of Landfill Gas



SCALE IN FEET

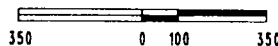


FIGURE 26
DISTRIBUTION OF ORGANIC CHEMICALS
DETECTED IN LANDFILL GAS USING SUMMA
CANISTERS AND TO-14 ANALYSIS

ROSE HILL REGIONAL LANDFILL
SOUTH KINGSTOWN, RI

METCALF & EDDY

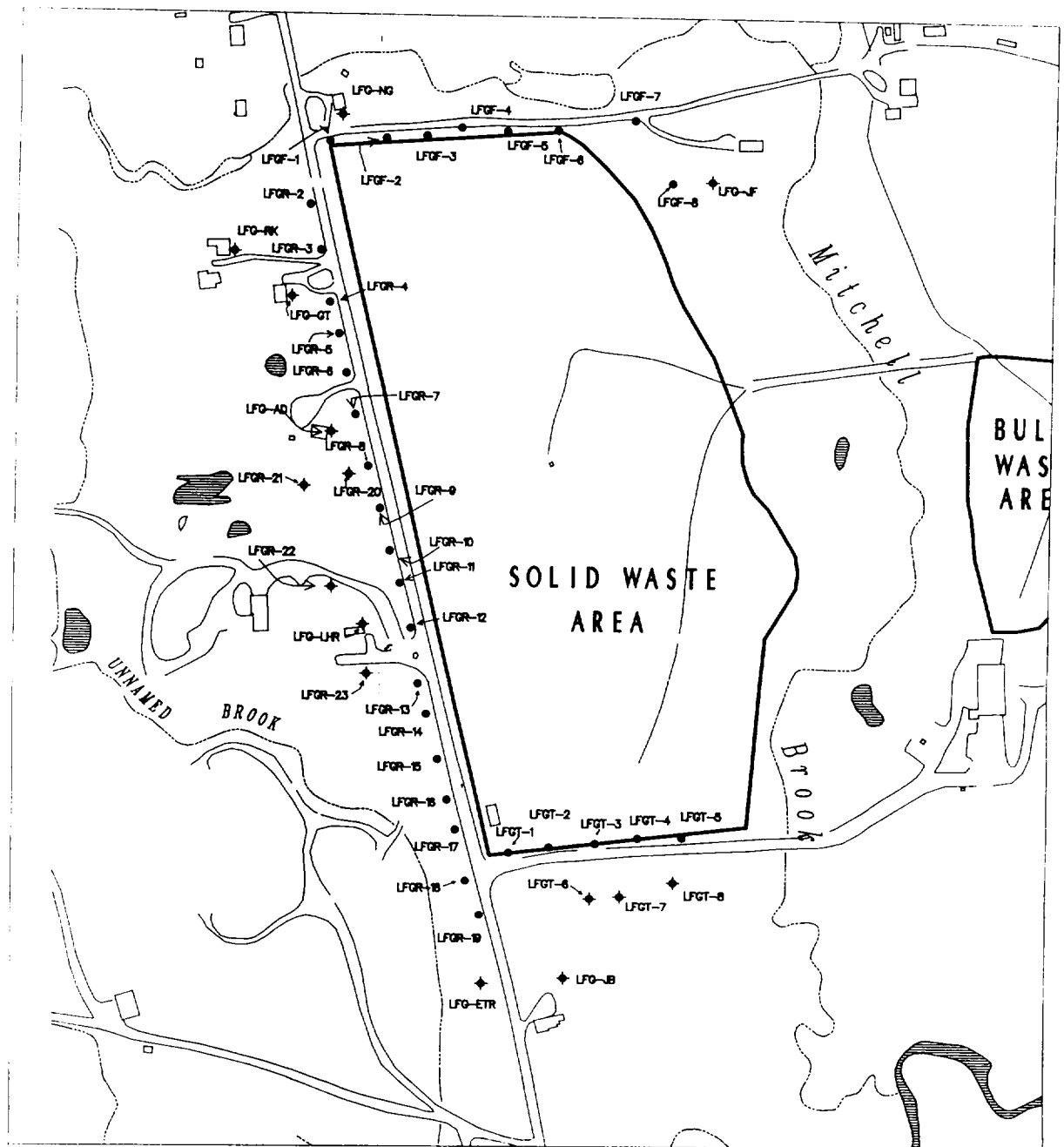


FIGURE 27

PERMANENT LANDFILL GAS SAMPLING LOCATIONS

ROSE HILL REGIONAL LANDFILL
SOUTH KINGSTOWN, RI

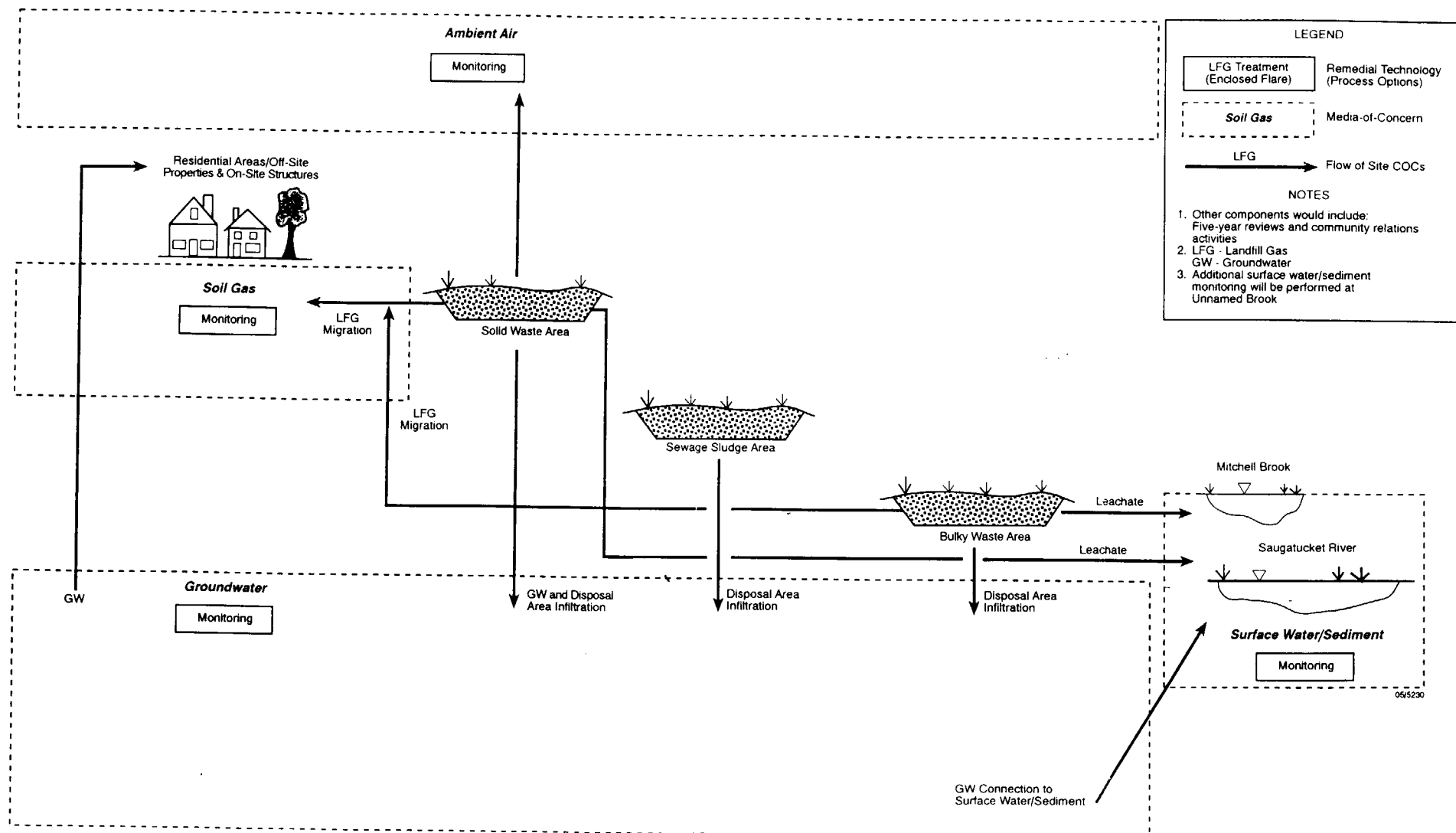


FIGURE 28
SCHEMATIC OF
ALTERNATIVE #1 COMPONENTS

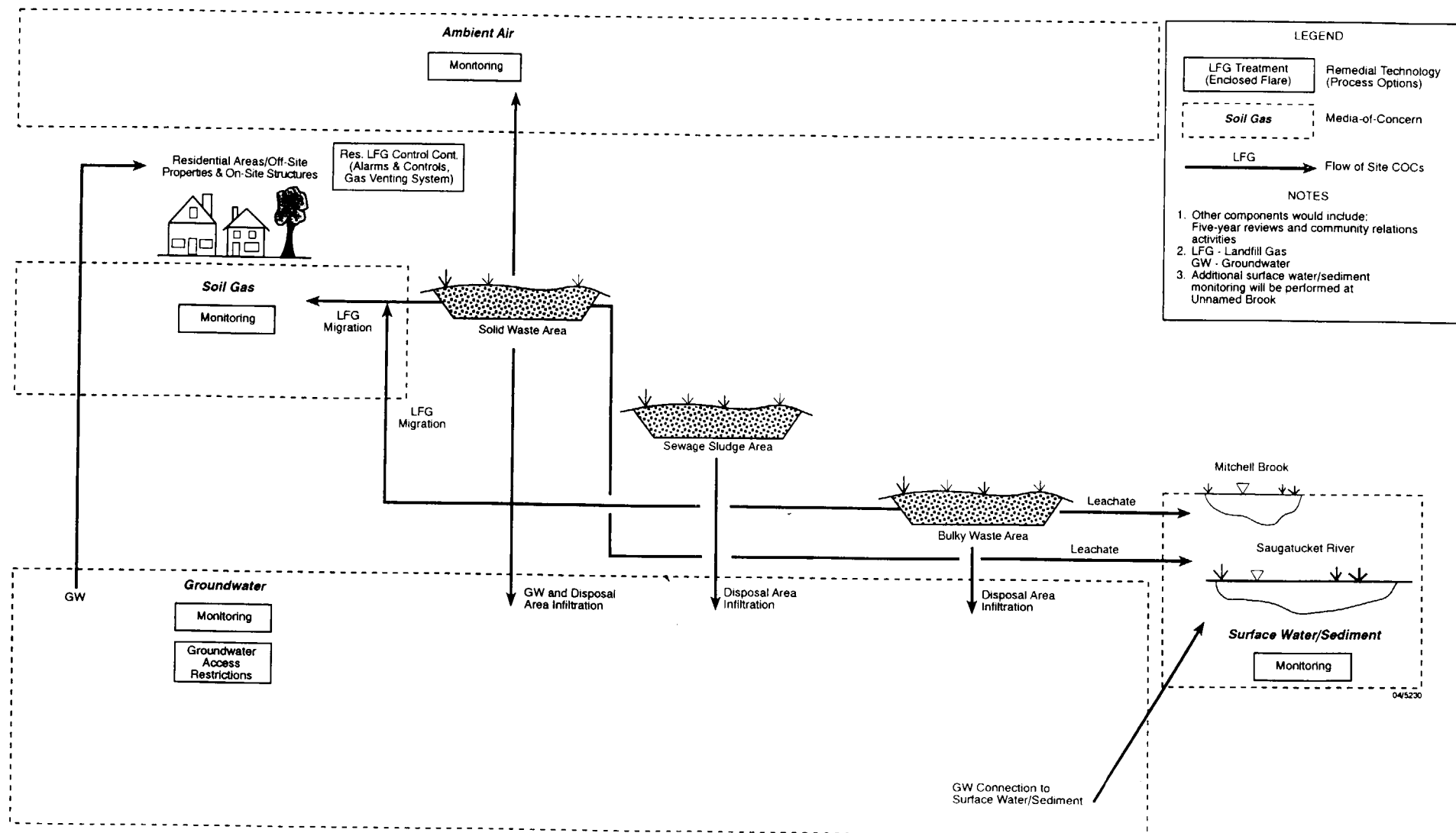


FIGURE 29
SCHEMATIC OF
ALTERNATIVE #2 COMPONENTS

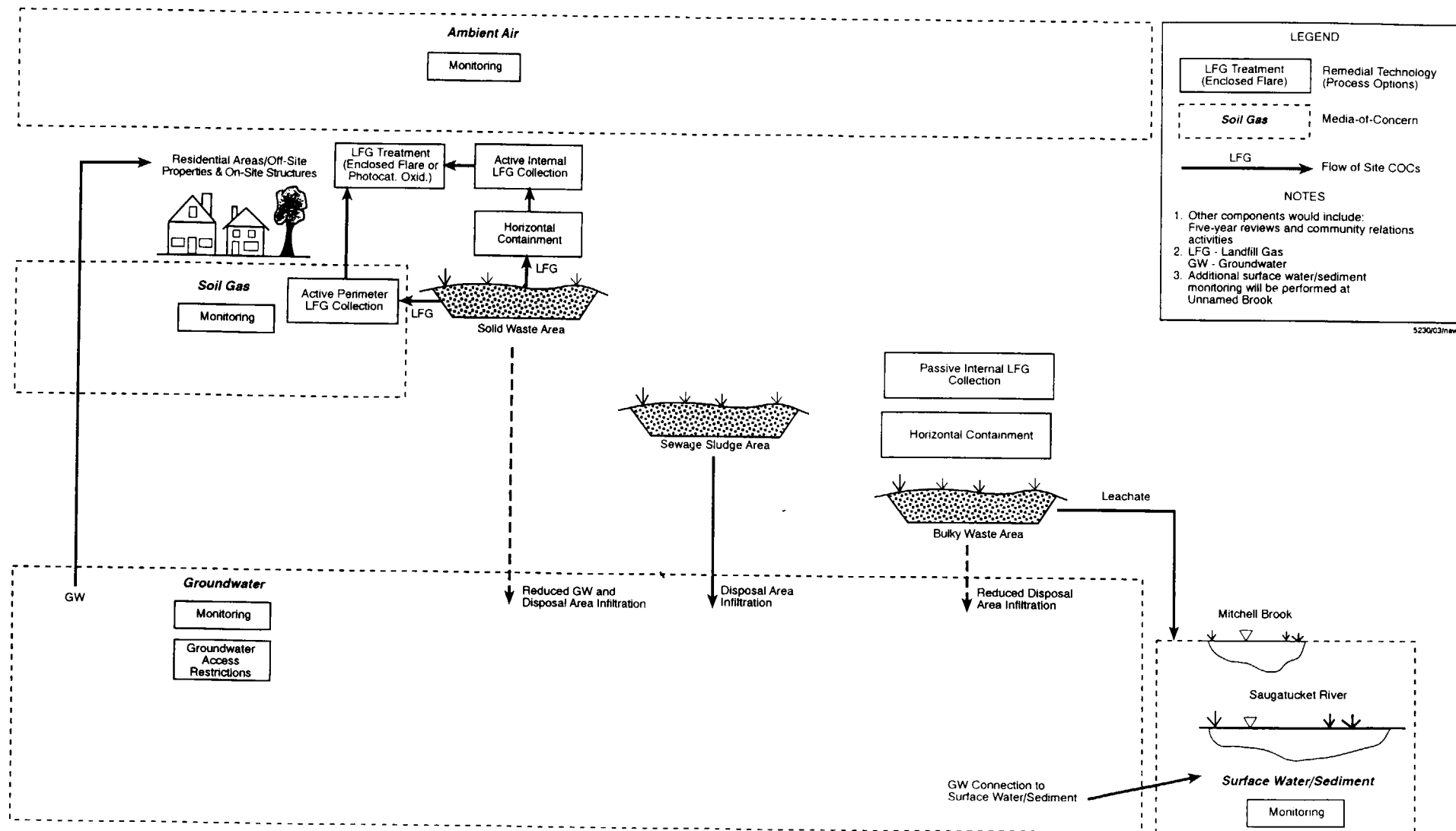


FIGURE 30 + FIGURE 31
SCHEMATIC OF ALTERNATIVES
#3a and 3b COMPONENTS

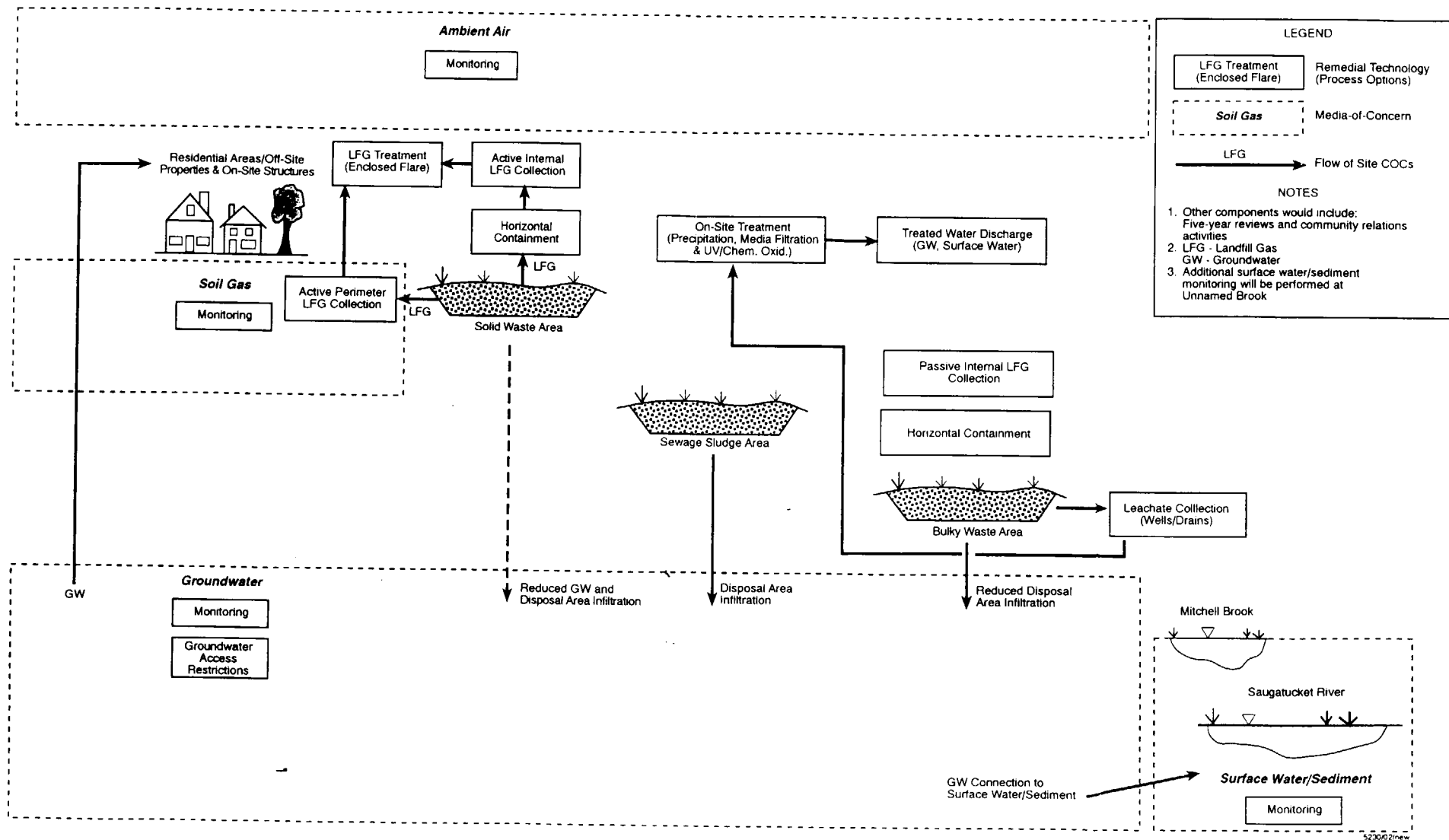


FIGURE 32
SCHEMATIC OF
ALTERNATIVE #4a COMPONENTS

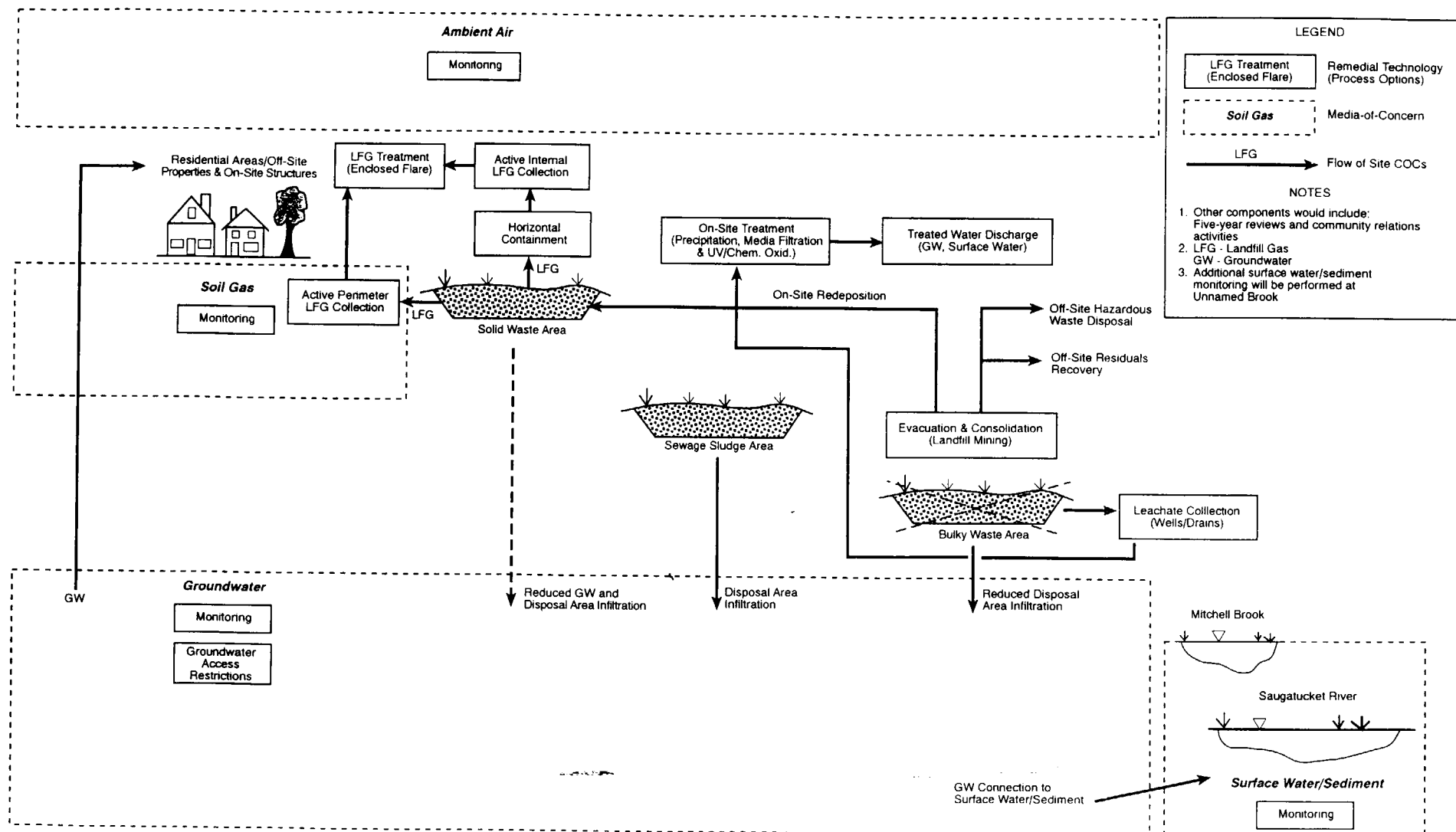


FIGURE 33

SCHMATIC OF
ALTERNATIVE #4b COMPONENTS